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In Vino Veritas: A Comparison of Organic Winemaking and Attitudes Towards Organic Wine in Four Global Regions

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IN VINO VERITAS: A COMPARISON OF ORGANIC WINEMAKING AND ATTITUDES TOWARDS ORGANIC WINE IN FOUR GLOBAL REGIONS

by
Mary Sloan Denning Merkel

A thesis submitted to the faculty of the University of Mississippi in partial fulfillment of the requirements of the Sally McDonnell Barksdale Honors College.

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April 2015

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ABSTRACT
MARY SLOAN DENNING MERKEL: In Vino Veritas: A Comparison of Organic Winemaking and Attitudes Towards Organic Wine in Four Global Regions (Under the direction of Dr. David Rutherford)

Organic winemaking is a very high value adding activity for the economy, but the industry has seen different levels of growth throughout the world. It is unclear whether organic winemaking is a viable long-term activity in prominent winemaking regions. This thesis looks at the regulations dealing with organic winemaking and attitudes towards organic wine in four major wine producing areas in the world: the United States, Italy, Argentina, and New Zealand. This thesis uses an extensive literature review of existing studies and papers dealing with organic wine, as well as government regulations and private standards to determine the current practices and attitudes in each of the four regions. Overall, the United States has the most developed and effective regulations for the organic winemaking industry, followed by Italy and Argentina. Argentina’s organic winemaking regulations are the easiest to understand and follow, followed by the United States and Italy. New Zealand does not have a national organic standard, which makes this region more difficult to assess under these two evaluations. The attitudes towards organic wine are most positive in New Zealand. Attitudes are positive in the United States and Italy, but consumers care more about quality than the label or processes associated with organic wine. Despite differences in regulations and attitudes, there is potential for increased growth in organic winemaking in each of the four regions if they adapt to fit the producers and consumers needs.
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<td>AAB</td>
<td>Associazione per l’Agricoltura Biodinamica</td>
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<td>AIAB</td>
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<td>Indicazione Geografica Tipica</td>
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<td>National Organic Program</td>
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<td>National Organic Standards Board</td>
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<td>OFPA</td>
<td>Organic Foods Production Act</td>
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<td>PDO</td>
<td>Protected Designation of Origin</td>
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<td>PGI</td>
<td>Protected Geographical Indication</td>
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<td>QWspr</td>
<td>Quality Wines Produced in Specified Regions</td>
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<td>TTB</td>
<td>Tax and Trade Bureau</td>
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<td>UN</td>
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CHAPTER I
Introduction

Rationale/Problem

Organic agriculture is a rapidly growing international industry. This rapid growth has the potential for high economic, environmental, and health impacts globally, and despite the higher prices associated with organic food, many people choose organic options because of health and environmental concerns. However, it is unclear whether people have the same attitudes when purchasing organic wine. Similarly to organic food products, organic wine is a very high value adding activity for the economy, so a growth in the organic wine industry could have immensely positive economic, environmental, and health impacts.

Organic wine production is regulated in different ways throughout the world, placing different burdens on winemakers in different regions and having varying health and environmental effects. To contribute to the understanding of the potential for growth of the organic winemaking industry throughout the world, this thesis identifies and assesses regulations in terms of impact on the winemaker as well as environmental and health benefits. Attitudes towards organic wine are also identified and assessed to understand if an adequate consumer base exists to help the industry grow once the wine is
produced. Understanding regulations of and attitudes towards organic wine can help determine the extent to which the industry can become successful globally.

**Purpose**

The purpose of this thesis is to assess organic winemaking in four major wine producing regions throughout the world: the United States, Italy, Argentina, and New Zealand. By identifying the policies regulating the industry in the four regions, it will be possible to determine how effective they are in this regulation as well as their effectiveness in maintaining the positive health and environmental effects associated with organic agriculture. The assessment will also help to determine in which region organic winemaking is easiest or least burdensome for the winemaker. Finally, an assessment of the attitudes towards organic wine in each region will give a better understanding of whether people treat and consume organic wine in a similar or different manner than organic food, and whether there is potential for the organic wine industry to grow.

**Research Questions**

1. Which region has the most developed and effective regulations for the organic winemaking industry? In this question, effective refers to ability to control the industry and maintain positive health and environmental benefits.

2. Which region's regulations are easiest to understand and follow, making them the least burdensome on the winemaker?

3. What are the attitudes towards organic wine in the four regions?
4. What is the potential for growth in the organic wine industry in the four regions?

**Methodology**

The methodology used in this thesis is an intensive literature review that begins with an assessment of organic winemaking in the United States, Italy, Argentina, and New Zealand and then compares the regulations and attitudes in each region in order to best determine the answers to the four research questions.

The four regions discussed in this thesis were chosen because of their significant amounts of existing organic agriculture. The United States has 1.9 million hectares (about 4,695,002 acres) of organic agricultural land. Italy has 1.1 million hectares (about 2,718,159 acres) of organic agricultural land. Argentina has 3.8 million hectares (about 9,390,004 acres) of organic agricultural land (International Foundation for Organic Agricultural Movements [IFOAM], 2013, p. 41). The United States, Italy, and Argentina are in the top ten countries with the highest amounts of organic agricultural land. New Zealand has a significantly smaller amount of organic agricultural land, but was chosen because the country's unique history of organic practices and lack of national organic standards provides an important comparison point against the other three regions.
CHAPTER II:
Organic Regulations

Organic Regulations Overview

Understanding what organic agriculture is and how the organic movement has
developed in each region is important because it provides context for the development of
regulations in the organic winemaking industry, as well as for challenges in creating
regulation in the four regions. This chapter begins with a brief overview of the history of
organic farming in general, and then covers the organic movement in each of the four
regions.

History of Organic

The organic agriculture movement began in the early twentieth century, starting in
Europe and spreading to the United States (Kuepper, 2010, p. 2). The movement
originated from a method known as humus farming, which attempted to fix widespread
agricultural problems by focusing on soil health. Humus farming embraced the idea that
“the health of a nation built on agriculture is dependent on the long-term vitality of its
soil” (Kuepper, 2010, p. 2). “Feed the soil” became the catchphrase for humus farming,
and soil-friendly practices included composting, applying animal manures, and using
lime and other natural rock dusts to maintain soil health. Farmers used very few, or completely avoided, synthetic fertilizers and pesticides. Humus farming shows, contrary to popular belief, that the organic movement was not just a return to farming practices before the creation of synthetic fertilizers and pesticides. (Kuepper, 2010, p. 3). The organic movement began as a conscious effort to maintain sustainable farming practices in a world where resources were being drastically mismanaged and exploited. In the 1940s the term “organic” gained popularity, and although the movement was no longer referred to as humus farming, it maintained the same goals.

Organic agriculture gained ground internationally in the 1960s and 1970s, for cultural and scientific reasons. Although the belief that organic agriculture grew out of the counterculture of the 1960s is not true, the counterculture did help to popularize the formerly small movement, making it more visible to the general public. The simultaneous environmental movement strengthened this popularity, with the publication of books like Rachel Carson’s *Silent Spring*, which condemned the widespread use of pesticides (Kuepper, 2010, p. 9). The professional research community had previously looked down upon organic agriculture, but this changed in the later twentieth century as the movement was strengthening. The United States Department of Agriculture (USDA) published a study in 1980 that “pointed to the environmental benefits of organic farming, its wise use of resources, innovations in pest and disease management, and the need for the USDA and land-grant universities to respond better to the needs of these growers” (Kuepper, 2010, p. 7).

Since the late twentieth century, organic agriculture has continued to grow internationally. In 2012, 37.5 million hectares (about 92,664,518 acres) of the earth’s
land was organic agricultural land. This is compared to 11 million hectares (about 27,181,591 acres) in 1999 (Our Earth, Our Mission, 2013, p. 2). In the United States, the organic agriculture sector has been growing about 20% per year since 1994, including during the economic recession in 2008 (Kuepper, 2010, p. 2). This growth has led to private and governmental regulation of the organic food industry. Regulations and standards, and the history of their creation, differs in each of the four regions. One common aspect of the four regions is that the process of maintaining standards involves organic certifying agents. Organic certifying agents, whether private or as a part of the government, ensure that a producer maintains the standards that define “organic” in that region. Organic certifying agents help to maintain the quality of organic products.

**International Foundation for Organic Agricultural Movements**

One of the most important leaders in the organic movement today is the International Foundation for Organic Agriculture Movements (IFOAM). The organization publishes annual reports on the state of the international organic movement, and their research and data was critical in the writing of this thesis.

IFOAM began in the early 1970s, in Europe, when Roland Chevriot began gathering up volunteers interested in the organic movement. At the time, Chevriot was serving as president of the French farmers association Nature et Progrès (Bourgeois, 1997, p. 1). The volunteers sent out letters to those potentially interested in joining the then unnamed foundation. The interested parties held a meeting in Versailles, France on November 5, 1972. Notable attendees included Lady Eve Balfour, founder of the UK Soil Association, Kjell Arman of the Swedish Biodynamic Association, and Jerome Goldstein of the Rodale Institute. At this meeting, IFOAM was created to “unite organizations
working towards advancement of organic agriculture” (“History,” 2013). Since then, IFOAM has expanded into a global association with about 800 affiliates in 120 countries. Countries writing organic agriculture regulations have adopted many of IFOAM’s standards.

The United States

The United States has a long history of organic agricultural practices and regulations. The United States has the third highest amount of organic agricultural land in the world, and the organic market is continuing to grow (IFOAM, 2013, p. 41).

Origins

Following the growth of the organic agriculture movement in the late twentieth century came a push for legislation to regulate practices in the United States. The California Certified Organic Farmers established the first organic certification program in the United States in 1973 (Kuepper, 2010, p. 10). Following this, many more private certification programs were established. Although they agreed on similar basic principles, many of the programs had details that varied, which led to complications for farmers and producers and a further push for a single national organic standard.

In 1989, CBS’ 60 Minutes broadcast an episode in which they publicized the known dangers of Alar, a trade name for the plant growth regulator daminozide, which was commonly used during the production of apples. The consequence was widespread fear of this potential carcinogen, and an immediate increase in the sale of organic apples. Without a unifying organic standard, an “organic” label was placed on apples that were grown according to standards that didn’t necessarily satisfy the movement’s goals.
This jeopardized the credibility of the organic movement, and would be a critical moment in the push for legislation.

The 1990 Farm Bill became the source of legislation to regulate the organic agriculture sector. The Farm Bill is the nickname for the Food, Agriculture, Conservation and Trade Act, a large piece of farm legislation renewed every five years by the United States government (Erdman & Runge, 1990, p. 109). The 1990 Farm Bill “continued the trend set in 1985 of adding new environmental restrictions on farm practices” (Erdman & Runge, 1990, p. 109). The continuation of this trend, and the cause for changes in the 1990 bill, came from four major forces. First, it was concurrent with budget talks, and a $161 million deficit meant a discussion of across-the-board funding cuts. Second, George H. W. Bush was up for reelection in 1990 and had a strong desire to decrease the deficit. Smaller and more flexible crop acreage bases appeared the best way to do this. Third, the environmental movement had gained strength since 1985, partly due to rising concerns over agricultural pesticides and chemicals on food, and the impact of the agricultural sector on the environment. Fourth, the legislation was being created simultaneously to the Uruguay Round of trade negotiations, and negotiators were concerned with what the upcoming Farm Bill would do to restrict trade and subsidize agriculture (Erdman & Runge, 1990, p. 112-114). As far as the organic movement was concerned, the third force was the most important.

Title 21 of the 1990 Farm Bill was the Organic Foods Production Act (OFPA). Through the USDA, the OFPA was required to begin rulemaking, and created the National Organic Program (NOP). Other than a brief period in the late 1970s, the USDA had not supported organic agriculture prior to OFPA (Johnson, 2008, p. 1). The purpose
of the NOP was to “establish standards for producers and processors of organic foods, and permit such operations to label their products with a “USDA Organic” seal after being officially certified by USDA-accredited agents” (Johnson, 2008, summary). This created a singular, national definition for organic, and it protected the legitimacy of the term “organic.” The National Organic Standards Board (NOSB), part of the NOP, was established as a 15 member governing body that would create the standards to define organic.

The NOP final rule became effective on February 21, 2001. The first step was the USDA accrediting private and state certification agents, who then began to certify producers, processors, and handlers (Johnson, 2008, p. 5). The program became fully operational on October 21, 2001.

**Current Policy**

The NOP defines organic agriculture as “a production system that is managed in accordance with the [Organic Foods Production] Act and regulations ... to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity" (Johnson, 2008, p. 1). Producers, processors, and handlers are required to follow the standards created by the NOSB, under the NOP, if they wish to market their product as organic. To use the word “organic” on a product label, the product must have 70% to 95% organic content. To be labeled with the USDA organic seal, the product must have 95% or more organic content (Johnson, 2008, p.4). To ensure that the standards are being followed, the USDA accredits private and state certification agents who visit the producers, processors, and handlers annually. These certification agents are reviewed for re-accreditation every
five years by the USDA (Johnson, 2008, p. 4). If the certification agent deems that the 95% standard is not being followed, it is illegal for the producer to use the USDA organic seal, but they may use the word “organic” on a product label if they meet the criteria for this designation by having 70% to 95% organic content.

The standards created by the NOSB, under the OFPA, are uniform minimum standards. States are welcome to create stricter or additional requirements if they have been reviewed and approved by the USDA (Johnson, 2008, p. 4). Private organic organizations are also welcome to create their own organic labels, but “the private label may indicate only that the organization’s standards are in addition to (but not superior to) the national standards” (Johnson, 2008, p. 4).

Italy

The history of organic agriculture in Italy is similar to that of the United States. Organic farming in this region has older roots, but became very popular in the late twentieth century, which created a push for regulation of the industry. Italy is part of the European Union (EU) and adopts policies created by the EU.

Origins

Similarly to the United States, the organic agriculture movement really began in the 1960s in Italy. With a central focus on an improved quality of life, more farmers became interested and the movement grew in the 1970s (Inan, 2003, p. 136). Throughout this time period, organic farming was developing at different rates in different Italian regions. For this reason, there is little detail on the overall organic agriculture movement throughout Italy (Michelsen, Lynggaard, Padel & Foster, 2001, p. 103). In the mid-1980s,
representatives from organizations and consumer agencies from each Italian region established the Commissione Nazionale Cos'è Biologico, the National Commission for Organic Agriculture. This commission established the first nation-wide standards for organic farming, based on IFOAM standards (Compagnoni, 2000, p. 172). These standards were self-regulatory and somewhat informal.

In 1988, the Italian Association for Organic Agriculture (AIAB) was created as a private organization that was more formalized than the National Commission for Organic Agriculture (the literature is unclear what became of National Commission after the founding of the AIAB). The AIAB “was meant as the only organization representing organic interests at a national level and organized in a federal way (with regional groups and associations)” (Michelsen et al., 2001, p. 112). A competing organization, however, was established the same year- the Consorzio per il Controllo dei Prodotti Biologici (CCPB). The CCPB was created under the Co-op, one of the largest food retailers in Italy. In general, most organic farmers felt most comfortable with the AIAB, whereas the CCPB was seen as an organization exclusively for farmers supplying Co-op (Michelsen et al., 2001, p. 112). The AIAB and the CCPB were the first two Italian organizations to represent organic farming interests. The only other two somewhat similarly-minded organizations were the Associazions Suolo e Salute (ASS) and the Associazione per l’Agricoltura Biodinamica (AAB). The ASS had been founded in 1969 and was made up primarily of people with scientific interests but included some farmers. The AAB had been established in 1949, and consisted of people interested in biodynamic agriculture. In the 1990s, these two organizations, along with the AIAB and the CCPB, would be recognized as organic certifying agents by the EU (Michelsen et al., 2001, p. 112).
The organic movement, in combination with the environmental movement and consumer concerns, strengthened throughout Europe in the late 20th century (Campagnoni, 2000, p. 77). IFOAM published the first Basic Standard for Organic Production and Processing in 1980. In 1987, the European Commission, the executive body of the EU, began working on a directive for organic farming. According to the EU’s website, a directive is “a legislative act that sets out a goal that all EU countries must achieve. However, it is up to the individual countries to decide how” (European Union). This directive became EC Reg. 2092/91, a EU Council Regulation, in 1991. According to the EU’s website, a regulation is “a binding legislative act. It must be applied in its entirety across the EU” (European Union). The Food and Agriculture Administration (FAO) of the United Nations (UN) summarizes EC Reg. 2092/91:

“This Regulation provides the first Community rules for the production, labelling and control of agricultural products and foodstuffs produced organically, to ensure transparency at each stage of production and processing. After defining the products that are eligible for the European organic farming label, this technical Regulation specifies the labelling requirements for the processed products and outlines the principles to be applied for the product to be presented with such specifications (rules for organic production restricting notably the use of chemical fertilizers and pesticides and envisaging periods of fallow). It provides for a regular system of control to monitor each operator producing, processing, importing or marketing products bearing organic farming specifications. It also establishes a particular code for the marketing of organically produced commodities imported into the EC” (“European Union”).

EC Reg. 2092/91 is very similar to the NOP in that it defines the labels that should be used in the production and processing of organic food, and sets the standards to which producers and processors must comply to in order to use these labels. The Regulation became effective on January 1st, 1993 and was finalized in 1995.

After the implementation of EC Reg. 2092/91, AIAB, CCPB, ASS, and AAB were recognized by the EU as certifying agents, along with three other organizations
Another EU Council Regulation, EC Reg. 2078/92, was crucial in the growth of organic agriculture in Europe, as well as specifically in Italy. EC Reg. 2078/92 was designed to promote governmental support of organic farming, and is summarized by the FAO:

“This Community aid scheme is intended to promote the use of farming practices which reduce the polluting effects of agriculture, an environmentally favourable extensification of crop farming, and sheep and cattle farming, ways of using agricultural land which are compatible with protection and improvement of the environment, the countryside, the landscape, natural resources, the soil and genetic diversity” (“European Union”).

Italy adopted EC Reg. 2078/92 from 1993 to 1996, which in combination with EC Reg. 2092/91, caused significant growth of organic agriculture in Italy (Michelsen et al., 2001, p. 115).

**Current Policy**

Italy’s organic policy is regulated by EC Reg. 2092/91, and is overseen by the Ministry of Agriculture, Food and Forestry. Similarly to how states or certifying agents in the United States can create stricter or additional requirements, two of the certifying agents in Italy that choose to have “private standards of national significance that are more restrictive than the EU Organic legislation” (Romeo & Bteich, 2014). There is no national organic logo for Italy; they use the EU organic logo.

**Argentina**

The organic movement in Argentina started slightly later than in the United States or Italy, but follows a similar pattern. Since the creation of a national organic standard in 1992, the organic industry has grown rapidly in Argentina.
**Origins**

A strong environmental movement in the 1980s became the basis for modern organic agriculture in Argentina. This was seen as a counterpart to the concurrent environmental movements in North America and Europe (Lockeretz, 2011, p. 218). The organic movement flourished within the context of the wider environmental movement. Two organic agriculture non-governmental organizations were established in 1985. The Green Hope Web of School Vegetable Gardens and the Centre of Organic Agriculture Studies (Canecos) shared in a similar purpose of promoting the advantages of organic food (Lockeretz, 2011, p. 218). These NGOs, combined with the publication of Argentinian organic farming books and widespread community appreciation of organic food, created a push for national regulation (Lockeretz, 2007, p. 219).

Two Argentines attended the IFOAM Trade Congress in Vienna in 1990, where they noticed the global demand for organic products. This incentivized these two individuals to switch to organic production upon their return, which in turn, inspired and incentivized others to do so as well. The switch to organic farming was relatively easy thanks to Argentina’s physical conditions (“Argentina”). Despite a lack of national legislation, organic certifying agents became necessary if Argentinian producers were to take part in global trade. The certifying agents that were created at this time followed established international rules, such as IFOAM’s standards (“Argentina”). [Note: more needed here about the number of certifying agents, what happened to Green Hope and Camecos, etc.]

In 1992, the Instituto Argentino para la Sanidad y Calidad Vegetal (IASSCAV) (Argentine Institute for Plant Health and Quality) and the Servicio Nacional de Sanidad
Animal (SENASA) (National Service for Animal Health), established national organic regulations, known as Decree No. 423. These national regulations were based on IFOAM and EU guidelines, and were equivalent and occasionally more demanding than both the IFOAM and EU guidelines (“Argentina”). These national regulations established procedures for the existing certifying agents, describing the guidelines that must be met for a product to be considered organic. Argentina was added to the European Commission list of equivalent third countries in 1996, which means that Argentinian products could be sold in the European market with an organic label as long as they have been produced in accordance with EU guidelines. The regulations have been amended and updated since their initial passing in 1992.

**Current Policy**

Today, the Argentinian national regulations, Decree No. 423, are enforced by SENASA. These are the minimum requirements for organic production. SENASA approves and certifies certifying agents, who monitor producers and processors. There are currently 12 certifying agents in Argentina, all of which are private and exist without any help from the government (“Argentina”). Each of the certifying agents creates private standards for organic production, which must meet SENASA’s minimum requirements.

**New Zealand**

Organic agriculture is the least structured in New Zealand. Although the organic agricultural movement had an early start in the region, there has not been the same push for organic legislation that was observed in the other three regions. For this reason, New Zealand is still lacking a national organic standard.
**Origins**

The organic agriculture movement had an early start in New Zealand, gaining ground in the 1940s. The Soil and Health Association and the Biodynamic Farming and Gardening Association were formed during this time to support both organic and biodynamic farming (Mason, 2013). Biodynamic farming is a movement that has grown similarly to organic farming and uses natural methods, but also relies on methods that lack scientific support. One of these methods is considering the effect of the moon on plant growth (Mason, 2013).

Demand for organic goods continued to increase in New Zealand, which led to the need for some type of organization to maintain the quality of the products. In 1983, the New Zealand Biological Producers and Consumers Council (BioGro), was created and began to certify organic produce to their standards (Mason, 2013).

The organic agriculture sector in New Zealand did not receive any encouragement or support from the government until the 1990s. In 1994, the government released a paper titled *Towards sustainable agriculture: organic farming*, which stated that organic agriculture would be good for society and the economy. However, restructuring within the government in the later 1990s prevented any further research into organics (Mason, 2013). The Royal Commission on Genetic Modification was established in 2001, in which the government researched and reported on the use of genetic modification in New Zealand. This led to increased opposition of genetic modification in agriculture, and boosted the organic economy. The domestic market increased from about $32 million in 2000 to $259 million in 2006 (Mason, 2013).
Current Policy

There are no national organic standards or organic labeling laws in New Zealand. According to the New Zealand government website, organic food must meet the same food safety standards “that apply to all food for sale in New Zealand.” The only law that affects organic labeling is New Zealand’s consumer protection law, which designates an organic label as optional product information, which must therefore be truthful. The government’s website states that, “if a product is represented as organic, all ingredients used to make the product should be 100% organic.”

As of 2008, there were four private certification agents who set their own standards for organic production and processing. Fair trading laws control the domestic organic market, and any exports of organic goods must comply with the standards of the country to which they are exporting (Mason, 2013). BioGro, the first private certifying agent, has eight international accreditations, including that of IFOAM, and can export to both the EU and the United States. One other private certifying agent in New Zealand is IFOAM accredited, AsureQuality Limited.

Organic Regulations Summary

The United States and Italy have a respectively longer legislative history of organic regulations. A national organic standard became effective in the United States in 2001 along with a government controlled organic label. This standard of 95% organic components represents the minimum to which products must comply if they wish to carry the organic label. If they do not reach this minimum, they may still use the word “organic” on their products if they meet the qualifications for including 70% to 95%
organic components. State and private certifying agents inspect producers to guarantee that they follow the standards necessary to use the organic label. These certifying agents are reviewed by the USDA to ensure that they continue to practice in accordance with the organic regulations. The private and state certifying agents may create stricter standards, and have their own labels, which indicate that the product follows other regulations in addition to the national standard.

A national organic standard was established in Italy in 1993 and was finalized in 1995. Similarly to the United States, this represents the minimum standard that products must meet to be labeled organic. There is no Italian organic seal; they use the EU organic logo. Private and state certifying agents determine whether producers meet the requirements and can use the logo. The EU oversees these private and state certifying agents. There are two private certifying agents in Italy that choose to use stricter standards in addition to the national organic standard.

A national organic standard was established by the government of Argentina in 1992, based on IFOAM and EU guidelines. The national organic standard creates the minimum guidelines, and the government accredits private certifying agents who then create private standards for organic production. There are currently 12 certifying agents, all of which are private and receive no assistance from the government. There is no Argentinian organic label, but food that has been certified as organic can be labeled “product of organic farming” along with the certifying information.

There is no national organic standard in New Zealand. As of 2008, there were four private certifying agents that create their own standards for organic production. Two of these are IFOAM accredited. Organic food in New Zealand must meet the same
national safety standards for all food, and organic labeling is regulated under consumer protection laws. There is no national organic label in New Zealand.
CHAPTER III:

Organic Winemaking Regulations

Organic winemaking is the process of making and producing wine according to organic standards. It is often much more time consuming than traditional winemaking, and is also more complex than most organic food production because it follows multiple steps. In this section, organic winemaking regulations have been broken down into two main steps for each region: the vineyard and the winery. The vineyard refers to the regulated processes that happen during the growing of the grapes. The winery refers to the regulated processes that happen during bottling and production. Understanding organic winemaking regulations in the United States, Italy, Argentina and New Zealand provides important context for understanding which regulations are more rigorous, which are effective in maintaining positive health and environmental benefits, and which have potential for future growth.

United States

In the United States, wine can be labeled as “100% organic,” “organic,” “made with organic grapes,” and “made with organic and non-organic grapes” (Department of
Agriculture [DOA], 2009, p. 1-5). Each designation requires different actions in the two steps of organic winemaking.

**Vineyard Regulations**

For wine to carry any sort of organic label or designation, the grapes must be grown organically and certified as so by an accredited certifying agent. This means they must follow all of the standards created by the NOSB under the OFPA, similarly to any other organic food product. In general, this means they are “produced using methods that preserve the environment and avoid most synthetic materials, such as pesticides” (“Organic Agriculture,” 2015). All of the regulations are found in 7 CFR 205 of the Federal Register.

**Winery Regulations**

Once the grapes have been certified organic, the winemaker has a number of options for what type of organic designation their product will have. The highest regulated wine to produce is wine that is designated as 100% organic. Wine that is designated as 100% organic “must contain 100% organically produced ingredients and have been processed using organically produced processing aids, not counting added water or salt” (DOA, 2009, p. 2). This means that all grapes, agricultural ingredients, and non-agricultural ingredients must be certified organic. Sulfites (sulfur dioxides) may not be added. Once a certifying agent has ensured compliance with these regulations, the wine may then carry the USDA organic seal and be labeled as “100% organic.”

The winemaker may also choose to produce wine designated as organic. The reason this wine is not considered 100% organic is because the regulations allow some
flexibility with agricultural and non-agricultural ingredients added to the wine. The four criteria organic wine must meet are:

1. “All grapes and other agricultural ingredients (including yeast, if commercially available) must be certified organic, except those on the National List” (the National List of Allowed and Prohibited Substances was created by the OFPA and is described below).

2. “Non-agricultural ingredients must be specifically allowed on the National List and may not exceed a combined 5 percent of the total product (excluding salt and water).”

3. “Sulfur dioxides (sulfites) may not be added.”

4. “Labels must state the name of the certifying agent (certified organic by *** or similar)” (National Organic Program [NOP], 2012, p. 1).

Once certified, the wine can then be sold with the USDA organic seal and the label can use the term “organic.”

Another option for the winemaker is to produce wine that can be designated as wine made with organic grapes. The five criteria wine made with organic grapes must meet are:

1. “100 percent of all grapes (of all varietals) must be certified organic.”

2. “Any remaining agricultural ingredients (e.g., yeast) are not required to be organic, but must be produced without excluded methods.”

3. “Any non-agricultural ingredients must be specifically allowed on the National List.”
4. “Sulfur dioxides (sulfites) may be added to yield less than 100 parts per
million in finished grape wine, but may not be added to wine “made with”
other organic fruit (e.g., apples).”

5. “Labels must state the name of the certifying agent (certified organic by ***
or similar)” (NOP, 2012, p. 2).

At least 70% of the total ingredients must be organic (DOA, 2009, p. 4). Once certified,
the label can include the phrase “made with organic grapes” but the wine cannot be sold
with the USDA organic seal.

The winemaker may also choose to produce wine that can be designated as wine
made with organic and non-organic grapes. To meet this designation, 70% of the
ingredients must be certified organic, not counting added water or salt. Wine may contain
added sulfites. The label must indicate that the wine was made with both organic and
non-organic grapes, and cannot be sold with the USDA organic seal (DOA, 2009, p. 5).

In addition to following the USDA regulations in both the vineyard and winery
steps, all wine with any kind of organic designation must follow the Alcohol and
Tobacco Tax and Trade Bureau (TTB) regulations. There are four steps to ensure
compliance with the USDA and TTB regulations. First, a state or private certifying agent
(accredited by the NOP) reviews the wine’s labels to ensure compliance with the national
organic standards. Second, the certifying agent stamps or signs the labels, verifying that
they meet the standards. Third, the individual or company aspiring to become an organic
operation TTB permitee must complete a Certificate of Label Approval application.
Finally, the aspiring TTB permitee submits the certifying agent’s labels and the
Certificate of Label Approval to the TTB (NOP, 2012, p.1). Once these four steps are
successfully completed, the wine can then be appropriately labeled and sold as either
100% organic wine, organic wine, wine made with organic grapes, or wine made with
organic and non-organic grapes.

The National List of Allowed and Prohibited Substances

The aforementioned National List refers to the National List of Allowed and
Prohibited Substances, designed for creation by OFPA. The National List works to make
it clear to producers, by organizing it in one place, which non-organic substances are
allowed or prohibited in the production of organic food products. According to the
USDA, “In general, synthetic substances are prohibited unless specifically allowed and
non-synthetic substances are allowed unless specifically prohibited” (“About the National
List,” 2015).

Italy

Until 2012, wine in Italy could only be labeled as “made with organic grapes,” but
a succession of EU Council Regulations led to changing this designation. First, EC Reg.
834/2007, which entered into application on January 1st, 2009, created new frameworks
for the production and labeling of organic products, strengthening what was stated in EC
Reg. 2092/91. Multiple EU Council Regulations then amended EC Reg. 834/2007,
making the process for producing and labeling organic products more clear. In 2012, EC
Reg. 203/2012 created detailed regulations for organic winemaking specifically, which
allowed Italian wine to be labeled organic and include the EU organic logo (EU Rules for
**Vineyard Regulations**

For wine to be sold as organic in Italy, all of the grapes used must be entirely organic. The standards for how to produce organic grapes are defined in EC Reg. 834/2007, which governs the production of all organic food products (Waite, 2007). This is comparable to the organic standards created by the NOSB in the United States.

**Winery Regulations**

EU Reg. 203/2012 lays out the specific regulations to be followed in the production of organic wine. For a wine to be considered organic and use the organic seal, it must first follow practices established by the Common Market Organization (CMO) for wine as amended in 2009 by regulation 606/2009.\(^1\) Second, to be labeled as organic in the EU, wine must meet a subset of specific regulations in EU Reg. 203/2012 that designates allowed substances and allowed and prohibited practices. Some of the prohibited practices include partial concentration through cooling, elimination of sulfur dioxide by physical processes, and electrodialysis (Commission Implementing Regulation, 2012, p. 44).

Organic wine in Italy can be made with sulfites, which differentiates the Italian and American processes. Disagreement over the use of sulfites initially delayed the passing of EC Reg. 203/2012. Eventually, a compromise was reached by creating categories of wines based on residual sugar content, with each category having their own sulfite limitations (*EU Rules*, 2012, p. 7).

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\(^1\) The CMO for wine is a body established in the 1960s for the regulation of wine among the six countries that established the first common market in Europe (the European Economic Community or EEC). The CMO for wine has endured as the EEC evolved into the European Union (EU), and it continues to influence the regulation of wine, although EU regulations are increasingly prominent (European Commission, 2006).
Similarly to how organic wine in the United States must meet TTB regulations, organic wine throughout the EU and in Italy must meet additional standards, including food safety, sustainability, and quality standards. Many of these quality standards are concerned with geographical information, “designed to protect the reputation of regional foods and preserve local traditions by helping producers earn a premium price for authentic products, as well as protecting consumers from misleading marketing” (IFOAM, 2012, p. 9). Until 2011, Europe’s Quality Wines Produced in Specified Regions (QWpsr) legislation mandated this geographical information and required each EU member state to design classes of wine, and designate the standards associated with those classes. If wine did not meet these standards, it was considered “table wine” (European Union Wine Label Information, 2015).

The EU switched from the QWpsr and table wine designations to a new labeling system in 2011. The two new designations created were Protected Designation of Origin (PDO), replacing QWpsr classifications, and Protected Geographical Indication (PGI), replacing table wine classifications. This switch from QWpsr and table wine designations to PDO and PGI was made for multiple reasons. It increased clarity and consistency in labeling, as the new designations cover all foodstuffs and beverages, rather than just wine. This helped to unify labeling across the board. It also eliminated the problems associated with using the term table wine, which has connotations of wine of poorer quality (European Union Wine, 2015).

PDO products are “produced, processed, and prepared in a given geographical area, using recognized know-how” (European Union Wine, 2015). Each EU member state created its own PDO classifications for wine that corresponded with the preexisting
QWspr classifications. In Italy, these categories are Denominazione di Origine Controllata e Garantita (DOCG) and Denominazione di Origine Controllata (DOC) with DOCG being the highest quality. PGI products are closely linked to the geographical area in which they were produced, and while the rules for labeling wine products as PGI are not as stringent as PDO, the PGI label sometimes commands more respect. Similarly to PDO classifications, each EU member state created its own PGI classifications that corresponded with the preexisting table wine designations. In Italy, the most notable PGI classification is Indicazione Geografica Tipica (IGT) (European Union Wine, 2015). The additional PGI category of Vino de Tavola, is Italian for “table wine” and is understood to be the lowest quality out of the four classifications (DOCG, DOC, IGT, and Vino de Tavola) (Wine-Searcher, 2015).

The number of classifications and labels across the EU and in Italy can be quite confusing. Bouzdine-Chameeva and Krzywoszynska stated that, “The European Union has difficulty in developing a credible regulatory environment for organic wine making with a common solution for the member states. There is confusion in existing definitions, regulations, implemented strategies and certification” (2011, p. 1).

With the number of classifications and labels available to winemakers in Italy, some opt to omit the organic label even if they meet the production regulations. This is because some feel that the term “organic” carries the connotation of lower quality, while others who have been successful without additional labels do not feel the need to add any to their products (EU Rules, 2012, p. 28).
Argentina

All of the information on organic winemaking in this section was taken from a translation of Decree No. 423, which established the regulations of organic winemaking in Argentina in 1992, and covers all organic food production, not just winemaking. No specific legislation exists for the production of organic wine. Decree No. 423 has been updated and amended since 1992. These updates include the banning of genetically modified organisms in the production of organic wine, and the approval of the use of pheromones to control pests.

Vineyard Regulations

For wine to be considered organic in Argentina, the grapes must be grown on land that has been considered organic for at least two years. The grapes must be grown in such a way as to satisfy the definition and goals of organic agriculture laid out by Decree No. 423. This includes maintaining soil health and managing pests and diseases in a way that protects biodiversity. Decree No. 423 also establishes a list of allowed substances in organic food production, similar to the United States’ National List.

Winery Regulations

No chemically synthesized products can be used in the production of organic wine, and neither the ingredients nor the final product can undergo radiation treatment. Producers must also abide by the list of allowed substances in the winery, in addition to in the vineyard. Sulfur dioxide can be used in processing of organic wine, but sulfites are not currently on the allowed list of substances and cannot be added to wine. In the processing, packaging, and preserving of organic wine, not more than 5% of the weight of the product can consist of non-organic materials. The containers used must be made of
biodegradable material. All organic wine must also comply with the national food safety and packaging standards.

**New Zealand**

There is no national organic standard in New Zealand but there are four certifying agents who can designate wine as organic if the wine complies with international standards. Producers must adhere to these international standards for three years before being fully designated as organic. These four certifying agents are BioGro, AsureQuality, Demeter, and Organic Farm New Zealand (“What is Organic Production?”, 2014). Because each certifying agent maintains a slightly different set of standards, they are not as easily disaggregated into the vineyard and winery process parts.

AsureQuality provides a number of certification services, including meeting international organic standards. In their individual organic standards, they have a list of prohibited and permitted substances for production. Demeter works by first certifying the vineyard, and then certifying wine by the lot after production is finished. Organic Farm New Zealand maintains their organic standards by operating on a “pod system,” in which a group of 3 to 5 producers review each other.

1). Because BioGro’s standards are the most encompassing, they will be used an example for organic winemaking in New Zealand and explained in terms of the two parts of winemaking.

**Vineyard Regulations**

The BioGro standards cover essentially every aspect of vineyard management. Beginning with the soil, BioGro sets standards for allowed nitrogen rates, permitted mulches, fertilizers and pesticides, and for burning vegetation (“Module 10”, 2009, p. 1). The standards also cover water supply and irrigation methods, discussing the proper water source purity and management systems. Vine establishment and management standards discuss pollination and the materials to be used in the management systems, among other topics. Pest, disease, and weed management are all covered in detail under BioGro’s standards (“Module 10,” 2009, p. 2).

**Winery Regulations**

BioGro’s standards begin regulating processes in the winery at the time of the transport of grapes, and cover the processes through bottling and labeling. Permitted pest control materials are listed in order to control pests, like rats, that may become a problem in the winery (“Module 10,” 2009, p. 2). The standards detail processing methods and allowed and prohibited substances, including additives, preservatives, and processing aids. Sulfites are permitted in organic wine, but the amount is managed in a similar system to the EU’s regulations. The type of wine (dry, medium, or sweet) designates the amount of sulfites that are able to be added to the wine, Dry wine (less than 5 grams of sugar per liter) can include 150 milligrams per liter of sulfites, medium wine (more than 5 but less than 30 grams of sugar per liter) can include 200 milligrams per liter, and sweet
wine (more than 30 grams of sugar per liter) can include 250 milligrams per liter ("Module 10," 2009, p. 23). BioGro’s standards also detail the bottling and corking process, discussing what materials can be used in corks. Overall, the BioGro standards are extremely in-depth throughout both the vineyard and winery processes.

**Organic Winemaking Regulations Summary**

Because of the complexity of and variation between the organic winemaking regulations in each region, comparing them is difficult. They vary in their development and their ability to control the industry and maintain the standards of organic agriculture. They also vary in their ease of comprehension.

The United States organic winemaking regulations are very well developed. The criteria that must be met for a wine to be considered among differing designations of organic is very clear, and there is an effective system in place for maintaining the goals of the organic regulations. The industry is very well controlled and monitored. The regulations are relatively easy for producers to follow, partly due to strong support of organic agriculture from governmental organizations like the USDA. Nevertheless, there is room for growth in how organic winemaking in the United States upholds the goals of organic agriculture because there is a lack of specificity in many areas of production, specifically in packaging.

Organic winemaking regulations in Italy are not as clear as in the United States, primarily due to complications caused by regulations coming from both the EU and Italy. Because Italy chooses to adopt EU legislation, the regulations are less direct. There are also a number of EU regulations that deal with organic winemaking, which makes it
confusing for producers attempting to adhere to the regulations. There is also room for growth in Italy in how organic winemaking upholds the goals of organic agriculture. Listing prohibited processes is a good start to being environmentally conscious, but there is room for further development and specificity.

Organic winemaking regulations in Argentina are very straightforward. There are no regulations specifically for winemaking, but the organic regulations are clear and concise, making it easy for producers. The regulations also cover every aspect of the production process, which maintains that the goals of organic agriculture are met throughout. Argentina would benefit, however, from creating legislation specifically for organic winemaking so that regulations can be specifically focused on the winemaking process and better adapted to the needs of winemakers.

There is no national organic standard in New Zealand, and no government regulations on organic winemaking. New Zealand would greatly benefit from both. The individual standards of the certifying agents are very strong and specific, especially BioGro’s. It would benefit New Zealand policymakers to model their regulations after BioGro standards, for both environmental and economical reasons.
CHAPTER IV:

Attitudes Towards Organic Production

The production and consumption of organic wine exists within the context of consumer attitudes towards organic food products. Understanding why consumers buy organic products and assessing attitudes towards organic wine specifically contributes to assessment of the extent to which there is room for growth in the market of organic wine production. Even with clear regulations making production easy for vineyards and wineries, the market will not grow if consumers hold negative attitudes towards organic wine and are unwilling to purchase the product.

There have been many studies done in both the United States and the European Union (covering general European Union attitudes towards organic food products and wine as well as studies specifically covering Italian attitudes). There have been significantly fewer studies done in both Argentina and New Zealand, which made assessing consumer attitudes more difficult. This is perhaps due to the fact that organic production is a relatively new concept in these two regions.
Attitudes Towards Organic Food

Before covering attitudes towards organic wine in each of the four regions, a brief overview of general attitudes towards organic food products in each region provides a foundation and context within which to look at attitudes towards organic wine. Because there is often confusion surrounding the term “organic,” studies concerning organic products, green products, and environmentally safe products were considered throughout this section in order to be more encompassing while evaluating attitudes. The terms are used interchangeably when appropriate.

United States

In recent years, there has been a change in customers’ purchasing decisions in the United States “to incorporate environmental considerations into lifestyle choices” (Barber, Taylor & Strick, 2009, p. 59). According to Hughner, McDonagh, Prothero, Shultz and Stanton (2007, p.1), “interest in organic food has grown remarkably as consumers and marketers react to popular media about health and environmental effects of pesticides, genetically-modified organisms, and food safety.” Consumers change their purchasing decisions “based upon how well products satisfy their needs and affect the natural environment” (Barber et al., 2009, p. 59). Overall, these changes have led to a huge increase in the organic food market in the United States. Between 1990 and 2010, organic food and beverage sales grew from $1 billion to $26.7 billion (Rahman, Stumpf & Reynolds, 2013, p.127).

There are various factors that affect consumers in the United States with respect to the purchasing of organic food products. Health is the primary reason consumers purchase organic foods, which are grown without pesticides and are not produced with
genetically modified organisms (Hughner et al., 2007, p. 9). In general, “regular consumers of organic food strongly associate health with diet, believe that eating healthily is more effective than medication in managing illness, and strive to stay abreast of the latest advancements in health and nutrition research” (Hughner et al., 2007, p. 8).

Health is closely followed by environmental concern as reason for choosing organic foods. These “ethical” consumers “are concerned with the environmental impact of their purchase decisions” and “seek to minimize the negative impact of their purchases on the natural environment” (Rahman et al., 2013, p. 127). A third factor commonly associated with purchasing organic food is taste, which plays an important role in discerning customer attitudes towards organic wine, as discussed later (Hughner et al., 2007, p. 9).

Most studies have determined that a very specific set of people purchase organic food in the United States. Hughner et al. (2007, p. 2-8) found that “organic food consumption is often related to an alternative lifestyle that includes active environmentalism, vegetarianism and/or alternative medicine.” The typical consumer of organic food is female, has children living in the house, and is older (Hughner et al., 2007, p. 2). Younger consumers often hold more positive attitudes towards organic food products, but are less likely to be purchasers than older consumers (Hughner et al., 2007, p. 2). The higher price of organic food products is often the main obstacle for potential consumers (Hughner et al., 2007, p. 10). While it was found that four in ten Americans say they are willing to pay for a product that is “perceived as being better for the environment,” 74% say that these products are too expensive” (Barber et al., 2009, p. 60).
Other problems associated with purchasing organic food products in the United States are concerns over actual benefits from these products, including their quality. Conflicting data exist in studies concerning this. Barber et al. (2009, p. 60) cite a study that claims 55% of Americans “agree that environmentally-safe products are not actually better for the environment” and that 61% believe these products do not work as well or find quality an issue. Forbes, Cohen, Cullen, Wratten & Fountain (2009, p. 6), however, cite a study that says only around a third of Americans believe that green products “were technically inferior to those which were produced without any environmental care,” which would suggest that the majority of Americans do not believe that these products are lesser in quality.

Overall, the main reason Americans purchase organic products is for health concerns, which are followed by and coupled with environmental concerns. Price is often the main obstacle in consumers deciding to purchase organic products, and whether consumers consider organic products to be of higher or inferior quality to others is contested.

**Italy**

Studies of Italian consumers note health, environment, and “organic food product characteristics (nutritional content, taste, appearance, and locally produced)” as the main factors behind purchase of organic food products (Gracia & De Magistris, 2007, p. 442). Although this compares similarly to factors behind Americans' purchase of organic food, the two consumer bases vary in an important way. Attitudes towards food in general, specifically genetically modified organisms, are very different in Italy and the United States. This is helpful in understanding how attitudes towards organic food have
developed because regulations in both the United States and Italy mandate organic food production without the use of genetically modified organisms.

In the European Union, consumers “see genetically modified foods as unhealthy,” “understanding them to be health hazards despite assurances from producers,” while American consumers are comfortable with food being modified genetically to achieve certain goals (Wolf, Bertolini, Shikama & Berger, 2012, p. 104). Seventy percent of Americans feel it is appropriate to genetically modify food to be more resistant to plant disease and less reliant on pesticides, 64% feel it is appropriate to help prevent disease, 58% to improve nutritional value, 49% to improve flavor, and 48% to extend shelf life (Wolf et al., 2012, p. 104). Italian consumers are not as comfortable. In a comparative study of attitudes towards food in the United States, Italy, and Japan, Wolf et al. (2012, p. 104) found that while American consumers “had relatively positive attitudes toward genetically modified food,” Italian consumers had relatively negative attitudes. In making purchasing decisions, Italian consumers listed “free of pesticides, good for the environment, grown in my local area, can be traced back to the processor and grower, and GMO free” higher than American consumers, whereas American consumers were more concerned with freshness and value (Wolf et al., 2012, p. 106).

When deciding which foods to purchase, Italian consumers rate organic products higher than Americans do (Wolf et al., 2012, p. 106). As already noted, much of this has to do with health concerns over genetically modified organisms. Another main factor is the environmental benefits associated with organic food products, in combination with knowledge of organic products. Italian consumers tend to have a higher understanding of the term organic than consumers in the United States (Wolf et al., 2012, p. 106).
Concerning environmental benefits, Italian consumers “believe that, to a greater extent, organic food products are healthier and are more concerned about pollution and environmental damage” (Gracia & De Magistris, 2007, p. 448). Other factors in purchasing organic food products in Italy include local production origin of the product and economic and socio-demographic characteristics (Gracia & De Magistris, 2007, p. 440).

Income is statistically important in determining consumers of organic food products in Europe. Consumers with the economic characteristic of a higher income are more likely to buy organic food products, which is similar to consumers in the United States (Gracia & De Magistris, 2007, p. 442).

There are many similarities between consumers of organic food products in the United States and Italy. The primary reasons for purchasing organic food products in both regions are health and environmental concerns, although the health concerns in Italy primarily stem from negative attitudes towards genetically modified organisms that are not seen in the United States. While reviewing the available literature, the concern of organic food products being of lower quality that is present in the United States was not seen in Italy. The primary concern found was “skepticism surrounding organic food labels,” because “some European studies have found that consumers tend to distrust certification bodies, leading them to question the genuineness of organic products” (Hughner et al., 2007, p. 11).
Argentina

Significantly less literature dealing with Argentinian consumers’ attitudes towards organic food products is readily available, in comparison to the United States and Italy. Organic agriculture in Argentina is considered “a market niche of great potential growth” (Canavari, 2009, p. 298). The primary motivation for purchasing organic food products is increasing their utility by “reducing perceived health risks” (Canavari, 2009, p. 297). Organic food products are purchased because Argentinian consumers are concerned with healthy food and health care, and are wary of unsafe production processes. For the most part, consumers are unaware of environmental issues (Canavari, 2009, p. 299).

Whereas gender and age played a specific role in predicting customer behavior in the United States, values or quality perceptions play a larger role than either of these in Argentina (Rodriguez, Lupin & Lacaze, 2006, p. 11). Many Argentinian consumers who choose to purchase organic food products do so because of a distrust in the “regulatory system’s ability to monitor and to assure food safety” (Rodriguez et al., 2006, p. 11). Results from focus group studies in four major Argentinian cities reveal that while 75% of consumers believe that food quality regulation is essential, 56% consider the current system inefficient (Rodriguez et al., 2006, p. 11). Argentinian consumers “with a higher educational level, who eat healthy food, and consider food control organisms ‘inefficient’ are more likely to buy organic products” (Rodriguez et al., 2006, p. 11). Consumers with a lower educational level are less likely to purchase organic food products (Canavari, 2009, p. 299).

The primary problems associated with purchasing organic food products in Argentina are a lack of information available to consumers, higher organic prices, and an
unstable supply to the domestic market. In 2006, only 4% of the total organic production in Argentina went to the domestic market (Canavari, 2009, p. 298).

Other than purchasing organic food products for health reasons, motivations in Argentina differ greatly from motivations in the United States and Italy. The concern for negative environmental effects seems to be nonexistent in the purchasing decision. Decisions are instead based heavily on attitudes towards food quality regulation, with distrust in food control organisms leading to the purchase of organic products. One common factor limiting the purchase of organic food products in the United States, Italy, and Argentina is the higher price of organic products in comparison to traditional products.

**New Zealand**

Similarly to Argentina, there is considerably less literature covering consumers’ attitudes towards organic food products and organic agriculture in New Zealand than in the United States and Italy. This is possibly because organic agriculture is a relatively new development in New Zealand. Another possible explanation is that there is no unifying organic standard in New Zealand, which would make it more difficult to research attitudes towards organic food products.

In the early 2000s, demand for organic food products was relatively low in New Zealand. A study done by Forbes et al. in 2009 found that demand for environmentally responsible products was likely higher in European and North American consumers than in New Zealand consumers. The study stated, “Previous research has suggested that New Zealand customers have little interest in purchasing “green” food products in comparison to their European counterparts (Forbes et al., 2009, p. 5). While this may have been true
in previous years, the quickly expanding market for organic food hints that consumers are increasingly placing a higher value on organic food products in New Zealand. In 2014, 73% of New Zealand consumers were purchasing organic food products. The reasons given for purchasing organic food include: it being healthier overall, other food and beverages may contain chemicals and hormones, it tastes better, it’s good for my children, and it reduces the risk of cancer (Colmar Brunton, 2014, p. 25).

Although there are few studies on customers’ attitudes towards organic food products in New Zealand, the growth of the organic food market shows that consumer attitudes are shifting and possibly moving to align with the attitudes found in the three other regions.

Attitudes Towards Organic Wine

Although organic wine is an organic food product, people may regard organic wine with different attitudes because wine is often something consumed for pleasure and not just health benefits. It is important to understand consumer attitudes towards organic wine, and compare them to attitudes held to organic food products, because it contributes to determination of the extent to which the organic wine market is viable and economically beneficial in the four regions. To be more encompassing in evaluating attitudes towards organic wine, studies discussing “environmentally friendly” or similarly named wines were considered, and the terms are used interchangeably throughout this section when appropriate.
As American consumer attitudes have shifted to include health and environmental concerns, individual markets have been affected. Barber et al. found that, “the wine industry in the United States has, for example, increasingly faced pressure to improve its environmental performance, and is now beginning a transformation regarding implementation of environmentally safer practices” (2009, p. 59). Consumers may change their preferred wine brand or wine region as their knowledge of environmental issues increases (Barber et al., 2009, p. 60). The pressure on the wine industry is growing as the wine industry grows. In 2009, the United States was the third largest nation in total wine consumption, and “during the past fifteen years, wine has increasingly become a beverage most often consumed by those Americans that drink alcoholic beverages” (Barber et al., 2009, p. 63).

It is natural to expect that “with this increase in demand and expansion come issues of the environmental footprint that wineries have” (Barber et al., 2009, p. 63). As consumer interest in health and the environment grows, many predict that consumers will begin to prefer organic wine to nonorganic, traditional wine (Rahman et al., 2013), p. 128). A 2009 study done by Barber et al. agreed with this hypothesis and predicted that, “strong attitudes regarding the environment are positively associated with the willingness to purchase environmentally friendly wine” (Rahman et al., 2013, p. 128). Their study consisted of a survey of 820 Americans, with the average age of 45 and a high level of education; 79% of respondents had a college degree (Barber et al., 2009, p. 66). As noted, “overall, the sociodemographic background of all respondents (middle-aged, educated, with higher incomes) mirrored the profile of wine consumers in general” (Barber et al.,
Their findings support the idea that environmentally conscious consumers in the United States view organic wine with a positive attitude:

“The average number of years respondents reported consuming wine was 29. The average number of bottles (750 ml) purchased per respondent was 19 per month, with the average amount spent during this same period $435, or $23 per bottle. When asked how much they would spend for an environmentally friendly made wine, the respondents reported $27 per 750 ml bottle, or $4 more than they normally would pay for a bottle of wine, suggesting there is a perception of quality and value associated with environmentally made wine” (Barber, 2009, p. 66).

A 2010 study conducted by Delmas had similar findings. This study asked 400 respondents to rate their perception of organic wine and biodynamic wine (wine made under biodynamic agriculture principles) based on wine taste, health benefits, and environmental impact (2010, p. 6). Overall, respondents had a more positive perception of organic wine (65.9%) than biodynamic wine (18.9%). 65.5% of their sample had heard of organic wine, while only 41% had actually tasted it (Delmas, 2010, p. 6). Despite the number of respondents having tasted organic wine being a minority, only 0.3% of respondents had a negative perception of organic wine (Delmas, 2010, p. 7). Delmas et al. found that those who viewed organic and biodynamic wine negatively were typically unfamiliar with the two products (2010, p. 1).

Although most of the findings from Delmas’ study indicated positive attitudes towards organic wine, this was not entirely consistent throughout the study. Their study found that some producers of organic wine believe there to be negative attitudes towards their product:

“Some members of the wine industry seem reluctant to promote their sustainable practices to consumers, fearing a negative response from their customers. Frog’s Leap Winery in Rutherford, California, is such an example. The winery has adopted organic certification but does not want to be known as such by
consumers. As the founder of Frog’s Leap Winery put it: ‘We don’t want to be known as the organic winery of the Napa Valley’” (Delmas, 2010, p. 2).

A 2013 study by Rahman et al. also found that customers have positive attitudes towards organic wine, but that these attitudes do not remain consistent after the customer has opened the bottle and tried the wine. Their study was conducted on the Washington State University campus over a two-day period. Two hundred and twenty-four volunteer participants were divided into a treatment group and a control group, with 108 and 116 members respectively. Of these 224 respondents, 56.3% were female. The respondents’ ages ranged from 21 to 67, with the mean age being 26 years (Rahman et al., 2013, p. 130).

Their first hypothesis was that “the presence of an organic cue will influence subjects’ wine preferences such that preference ratings will be significantly higher when the cue is present” (Rahman et al., 2013, 128). This held true, with a strong number of respondents preferring wine that is labeled organic before the bottle is opened. After the bottle was opened and wine tasting was incorporated into the study, however, Rahman et al. found that, “neither ecocentric nor anthropocentric values significantly influenced wine preferences,” meaning an organic label that may indicate better environmental or health benefits did not cause respondents to prefer the taste of the wine. Taste alone was found to be the strongest predictor of wine preferences (Rahman et al., 2013, p. 131).

Previous studies have suggested that “some consumers prefer organic over nonorganic wines and that they are willing to pay a premium price for such products” and that “consumers who exhibit high environmental attitudes strongly prefer organic wines and are willing to pay more to purchase them than consumers with low environmental attitudes are willing to pay.” Studies have also suggested that despite this, for consumers
who value a healthy lifestyle, more than the label needs to be considered when assessing consumer attitudes towards organic wine (Rahman et al., 2013, p. 131). In summary, Rahman et al. found that:

“Before the bottle is opened, the existing studies indicate a strong contingent of customers who prefer wine that is labeled organic. Once the bottle is opened, however, we can infer that customers, having tasted a wine purchased on the basis of extrinsic organic cues, might not repeat that wine purchase if the taste does not meet their expectations. It is possible that consumers who are strongly committed to buying organic might sacrifice intrinsic attributes for the sake of the cause or search for alternative organic wines, but our study suggests that there are limits to the extent to which consumer attitudes override sensory responses” (Rahman et al., 2013, p. 132).

Based on existing literature and studies, attitudes towards organic wine in the United States correspond well with the attitudes towards organic food products. Most consumers, with a concern for environmental or health factors, have positive attitudes towards organic wine. Once consumers have purchased and tasted organic wine, however, their decision to continue purchasing organic wine based on intrinsic concerns is most likely to be overridden by their attitudes towards the taste of the wine. Rahman et al.’s study suggests “that winemakers committed to organic methods would do well to focus on taste and other intrinsic attributes of their wines if they want to stimulate repeat purchase decisions” (Rahman et al., 2013, p. 132).

**Italy**

While the purchase and consumption of all wine has been increasing in recent years in the United States, it has been decreasing across the Atlantic, in Europe. Some of this has been attributed to the Millennial generation shifting their values to include environmental and health concerns, causing wine attributes beyond origin, taste, and price to become of importance when making purchases (Pomarici & Vecchio, 2013, p.
In spite of the overall decline in wine consumption in Europe, there has been a huge amount of growth in organic viticulture in the region. The total area of organic grapes in Europe reached 231,000 ha (about 571,000 acres) by the end of 2011. Eighty-nine percent of the total global area under organic grape cultivation is in Europe, making it the largest producer of organic wine (CBI, n.d., p. 5). Three primary and separate motivations for organic winemakers have been noted. First, a respect for natural processes has encouraged organic winemakers to value their product over profits. Second, organic winemakers see organic wine as the best way to express the natural terroir of the area. Third, some producers have been motivated by the ever-increasing global organic wine market and encouraged by EU agriculture subsidies available to organic winemakers (Bouzdine-Chameeva, 2011, p. 4). While the consumption of all wine in Europe is decreasing, the consumption of organic wine is increasing.

One reason why the market for organic wine in Europe has skyrocketed, but it has remained somewhat of a niche product in the United States, is believed to be the difference in the definition of organic wine in both regions. When the EU allowed the term “organic wine” to be used in 2012, they decided that sulfites could be included in what was to be labeled organic wine. This was in direct opposition to the 2011 decision in the United States in which the NOSB “denied a petition to allow sulfites into organic wine” (Gray, 2014, p. 1). In an editorial piece for Wine-Searcher, W. Blake Gray argued that the impact of these decisions has been striking on both production and consumption of organic wine, stating that, “In the US, organic wine is still a niche category that is outsold even at many natural food stores by unregulated, loosely defined ‘organic wine’” (2014, p. 1). Gray is stating that allowing sulfites in wine has made the difference in the
large growth of the organic wine market in Europe, while the growth has remained slower in the United States. Gray also states that there doesn’t seem to be much support among European winemakers to remove sulfites from organic wine. Winemakers must convince consumers that organic wine is of equal or superior quality to traditionally produced wine, which is easier with sulfites included in the process. Being certified organic and using an organic label “only becomes a competitive advantage when your wine has the same quality as conventional wine of the same price” (CBI, n.d., p. 1).

Italy has seen the same trend as the EU in terms of growth of the organic wine market. From 2004 to 2008, the amount of land covered by organically grown grape vines increased 29% (Bouzdine-Chameeva & Krzywoszynska, 2011, p. 2). Consumer attitudes towards organic wine in Italy are mixed. Some studies show that organic wine is likely to have an advantage over other wines because “consumers consider sustainable practices an important feature of wine production” and would buy the products from vineyards with values that match their own (Pomarici & Vecchio, 2013, p. 539).

Many consumers of organic wine “do not accept anymore that organic wines are of lower quality than conventional wines of the same price,” which requires them to be held to the same standards (CBI, n.d., p.1). Most studies reflect this point of view, showing that Italian consumers place quality of wine above anything else, including environmental and health benefits. It has been found that an organic label does “little to improve a wine’s image if it is not perceived as quality regardless of environmental certification” (Bouzdine-Chameeva, 2011, p. 2). The Centre for the Promotion of Imports found that there is a strong prejudice among consumers about the quality of organic wine, with consumers perceiving it to be of lower quality than “conventional wine form the
same period, region and grape variety” (n.d., p. 9). A 2013 study by Pomarici and Vecchiono concluded that:

“Current consumer awareness of sustainable winegrowing and winemaking is widely acknowledged to be rather limited. Furthermore, there remain major differences in forecasts of the number of wine drinkers willing to purchase sustainable wines in the near future. Most believe that consumers will not be willing to trade off the quality of a wine for environmental/social features” (p. 538-539).

Although the organic wine market is growing in Italy, consumers place a much higher value on quality than environmentally friendly practices or organic labels. Whereas in the United States consumers are more likely to buy organic wine just because it is organic and matches their value system, Italian consumers consider quality above anything else when purchasing wine.

**Argentina**

There is currently no available literature on Argentinian consumers attitudes towards organic wine. One study that mentioned organic wine in Argentina stated that organic wine could be considered a competitive alternative to traditionally produced wine because of certain factors (“history, brand, and nature characteristics”) (Zilber, Friel & Machado, 2010, p. 164). Outside of this, there is a distinct need for research on consumer attitudes towards organic wine in Argentina to determine whether there is room for growth in the relatively new market sector.

**New Zealand**

Although there is no national organic standard in New Zealand, the organic food industry is booming and consumers have reacted positively towards the production of organic wine. Environmental concerns with the wine industry can certainly be considered a contributing factor to these attitudes. Synthetic fertilizers, herbicides and pesticides are
commonly used in most traditionally produced wines. Marlborough, one of the largest wine producing regions in New Zealand, has had recent issues with groundwater depletion (Forbes et al., 2009, p. 2).

An intensive 2009 study by Forbes et al. determined that consumers in New Zealand have “a strong demand for wine which is produced using ‘green’ production practices” and that they “believe that the quality of a sustainable wine will be equal to or better than” traditionally produced wine (Forbes et al., 2009, p. 1). The study was a survey of 109 respondents located in Christchurch, New Zealand. Sixty-two respondents were female, 47 were male. The age range of the respondents was from 18 to 60+ years (Forbes et al., 2009, p. 8). Telling statistics from the study include:

- “Over 75% of respondents indicated that they would prefer to drink wines that had been produced using environmentally sustainable practices” (Forbes et al., 2009, p. 9)
- “Just over 72% of respondents indicated an intention to purchase an environmentally sustainable wine over one of similar price and quality which had been produced using conventional viticultural practices” (Forbes et al., 2009, p. 9)
- “The majority of respondents (53%) believed that producing wines through environmentally sustainable practices would result in no change to wine quality” (Forbes et al., 2009, p. 11)
- “37% of respondents believed that quality would actually increase if sustainable practices were used to produce wine” (Forbes et al., 2009, p. 11)
- “Around 73% of respondents indicated that they would be prepared to pay more for an environmentally sustainable wine” (Forbes et al., 2009, p. 12)
The authors of the study had hypothesized that, due to a lack of recent food quality or safety scares similar to what has happened in the United States and Italy, consumers in New Zealand would not be as concerned with environmentally friendly practices or respond so strongly to organic wine. Findings from other researchers who have determined that the environmental movement is not as developed in New Zealand as in other countries, and that therefore there is less demand for environmentally friendly products further supported their hypothesis (Forbes et al., 2009, p. 14). The authors’ findings directly contradict this hypothesis. Consumers in New Zealand seem to have very positive attitudes towards organic wine. Most were not concerned with quality, which was the biggest problem with attitudes towards organic wine in Italy and somewhat of a problem in the United States. Some respondents believed that organic wine would actually be of higher quality than traditionally produced wine.

Attitudes Towards Organic Production Summary

The main reason Americans purchase organic products is for health concerns, which are followed by and coupled with environmental concerns. Price is often the main obstacle in consumers deciding to purchase organic products, and whether consumers consider organic products to be of higher or inferior quality to others is contested. Based on existing literature and studies, attitudes towards organic wine in the United States correspond well with the attitudes towards organic food products. Most consumers, with a concern for environmental or health factors, have positive attitudes towards organic wine. Once consumers have purchased and tasted organic wine, however, their decision
to continue purchasing organic wine based on intrinsic concerns is most likely to be
 overridden by their attitudes towards the taste of the wine.

There are many similarities between consumers of organic food products in the United States and Italy. The primary reasons for purchasing organic food products in both regions are health and environmental concerns, although the health concerns in Italy primarily stem from negative attitudes towards genetically modified organisms that are not seen in the United States. Although the organic wine market is growing in Italy, consumers place a much higher value on quality than environmentally friendly practices or organic labels. Whereas in the United States consumers are more likely to buy organic wine just because it is organic and matches their value system, Italian consumers consider quality above anything else when purchasing wine. This means that if the organic wine market is to continue growing at a steady rate in Italy, organic winemakers will have to focus strongly on the quality of the wine they are producing or strongly emphasize the health and environmental benefits that come with purchasing their wine.

While data on Argentinian attitudes towards organic wine are limited, their attitudes towards organic food products are instructive. Other than purchasing organic food products for health reasons, motivations in Argentina differ greatly from motivations in the United States and Italy. The concern for negative environmental effects seems to be nonexistent in the purchasing decision. Decisions are instead based heavily on attitudes towards food quality regulation, with distrust in food control organisms leading to the purchase of organic products. One common factor limiting the purchase of organic food products in the United States, Italy, and Argentina is the higher price of organic products in comparison to traditional products. There is currently no
available literature on Argentinian consumers attitudes with respect to organic wine. One study that mentioned organic wine in Argentina stated that organic wine could be considered a competitive alternative to traditionally produced wine because of certain factors (Zilber et al., 2010, p. 164).

Although there are few studies on customers’ attitudes towards organic food products in New Zealand, the growth of the organic food market shows that consumer attitudes are shifting and possibly moving to align with the attitudes found in the three other regions. Consumers in New Zealand seem to have very positive attitudes towards organic wine. Most were not concerned with quality, which was the biggest problem with attitudes towards organic wine in Italy and somewhat of a problem in the United States. Some respondents believed that organic wine would actually be of higher quality than traditionally produced wine. Their findings suggest that organic wine has an enormous potential for success in New Zealand, as long as quality does not become an issue after consumers have purchased wine. The market for organic wine could significantly benefit New Zealand’s economy.
CHAPTER V

Conclusion

The purpose of this thesis is to assess organic winemaking in four major wine producing regions throughout the world: the United States, Italy, Argentina, and New Zealand. By identifying the policies regulating the industry in the four regions, it will be possible to determine how effective they are in this regulation as well as their effectiveness in maintaining the positive health and environmental effects associated with organic agriculture. The assessment will also help to determine in which region organic winemaking is easiest or least burdensome for the winemaker. Finally, an assessment of the attitudes towards organic wine in each region will give a better understanding of whether people treat and consume organic wine in a similar or different manner than organic food, and whether there is potential for the organic wine industry to grow. Winemaking is a very high value adding activity for the economy, so a growth in the organic wine industry could have positive economic, environmental, and health impacts.

Answers to Research Questions

1. Which region has the most developed and effective regulations for the organic
winemaking industry? In this question, effective refers to the ability to control the industry and maintain positive health and environmental benefits.

The United States has the most developed and effective regulations for the organic winemaking industry out of the four regions studied. The legislation clearly controls the two parts of winemaking, with specific rules for the vineyard and the winery. The regulations clearly list allowed and prohibited substances and practices in each part under the National List. The goals of organic agriculture and organic winemaking are included in the legislation, which helps to maintain positive health and environmental benefits throughout the process. The one way in which the United States could become more effective would be to include rules for packaging organic wine, which would add to the environmental benefits of the product.

Italy has the second most developed and effective regulations for the organic winemaking industry. Similarly to the United States, there is specific regulation for the winemaking process. The two parts, vineyard and winery, are divided pretty well. The goals are stated at the beginning of the regulation governing organic winemaking, which helps to maintain positive health and environmental benefits throughout the process. Italy’s regulations could control the process better if they were clearer. There are, however, a number of EU regulations that have amended each other, making the process confusing for controlling the industry. Similarly to the United States, by including rules for packaging organic wine, Italy could increase environmental benefits and effectiveness.

Argentina has the third most developed and effective regulations for the organic winemaking industry. The rules for organic agriculture in general are very
straightforward, but because there is no regulation specifically for organic winemaking, the industry is not controlled as well as would be possible with organic winemaking regulations. Argentinian regulations are very effective in maintaining positive health and environmental benefits. Every stage of the process for producing and packaging organic products is covered in their regulation, with the environmental and health goals clearly stated at the beginning of the regulation.

New Zealand does not have a national organic standard or regulations for organic winemaking. For this reason, the industry is not well controlled and it is difficult to maintain a high quality of organic products, in turn maintaining positive health and environmental benefits. If New Zealand were to adopt a national organic standard based on BioGro’s private standards, New Zealand would have the most developed and effective regulations for the organic winemaking industry. BioGro’s standards are very clear and thorough, covering each part of the winemaking process. Their standards are the most detailed out of the ones reviewed for this thesis. They include which type of wood is most environmentally friendly to be used in an organic vineyard, and continue this level of effectiveness throughout the process.

2. Which region’s regulations are easiest to understand and follow, making them the least burdensome on the winemaker?

The United States has the second easiest organic winemaking regulations to understand and follow. With the vineyard and winery processes managed by different regulations, it is slightly less straightforward than in Argentina. However, the different
regulations work well with each other and it remains clear what objectives must be met for the wine to be considered each organic designation.

Italy has the most confusing organic winemaking regulations. Because Italy adopts EU regulations, and there have been a number of different EU regulations controlling the production of organic winemaking, it is very difficult for the winemaker to follow. Many of the existing regulations also call for changes in future regulations, which makes them more confusing and more burdensome on winemakers. The separate quality standards that Italy holds, PDO and PGI, have notable goals in maintaining quality but are confusing. Overall, the number of different regulations and standards that must be followed for wine to be successfully considered organic in Italy is complex and burdensome on the winemaker.

Argentina’s organic winemaking regulations are the easiest to understand and follow out of the three regions with national organic standards and organic winemaking regulations. There is one regulation, Decree No. 423, that governs all parts of the process, which makes the process least burdensome on the winemaker. What can and cannot be done throughout the process is clearly listed and easily understood.

New Zealand does not have a national organic standard or organic winemaking regulations, so it is difficult to assess the burden on the winemaker. As suggested earlier, if New Zealand were to adopt BioGro’s private standards as a national standard, New Zealand’s regulations would be the easiest to understand and follow. BioGro’s standards are extremely clear, and make it evident what must be accomplished for a wine to be of consistent organic quality.
3. What are the attitudes towards organic wine in the four regions?

In the United States, most consumers have positive attitudes towards organic wine. Their attitudes towards organic wine correspond with national attitudes towards organic food products, valuing them for their perceived environmental and health benefits. Taste, however, may override these values if it is found that the wine is not high quality. While consumers in the United States are often very willing to purchase organic wine based on its perceived benefits, they will not continue to purchase it if the quality of the wine does not meet expectations.

In Italy, there is a perception that organic wine is of lower quality than conventionally produced wine. Quality is the most important factor in purchasing wine, and will override consumers willingness to buy organic wine for environmental and health reasons.

There is not enough existing literature or information on Argentinian’s attitudes towards organic wine. They are willing to buy organic food products for health reasons and concern over food quality, but it is unclear whether this translates to purchasing organic wine. More studies need to be done on Argentinian attitudes towards organic wine.

New Zealand consumers have extremely positive attitudes towards organic wine. Many of them do not perceive there to be an issue with quality in organic wine, with some consumers believing that organic wine will actually be of higher quality. Consumers are willing to pay more for organic wine than traditionally produced wine.
4. Is there potential for growth in the organic wine industry in the four regions?

The organic wine industry in the United States is growing, but is still considered to be a niche industry with great potential for continued growth. The regulations are highly developed and effective, and not considered to be very burdensome on the winemaker. To help the organic wine industry grow in the United States, winemakers must focus specifically on the quality of wine they are producing. Because consumers are willing to buy organic wine because of its perceived health and environmental benefits, guaranteed quality of the wine will assure that consumers will continue to purchase the product and the market will grow. Allowing sulfites to be used in the process of organic winemaking will increase the quality of the wine, increasing the growth of the market in the United States. Customers who purchase organic wine because it aligns with their values will continue to purchase organic wine because the quality of the wine will increase and the taste will be more favorable if sulfites are allowed in the production of organic wine. Allowing sulfites to be used will also increase the United States’ presence in the global market because the wines produced will be of similar quality to those produced with high demand in Europe.

There is potential for growth in the organic wine industry in Italy, but the potential is not as readily available as in the United States. First, Italy must focus on creating more direct and clear regulations for the industry. This will make it easier for winemakers to produce organic wine, removing some of the negative connotations winemakers have of organic wine in Italy. Currently, they find it too confusing and are often unwilling to become involved in the market. Second, if the organic wine market is to grow in Italy, the quality of the wine must be of the utmost importance. If quality
organic wine is already being produced, the producers need to spend more time and
money on promoting their product as high-quality wine. Promotion within Italy and
within the EU will certainly help to expand the size of the organic wine market, helping
to abolish negative stereotypes of organic wine in this region.

Consumer attitudes towards organic food products and the natural environment of
Argentina make it possible for great growth in the organic wine market. The regulations
are clear and not considered to be burdensome on the winemaker. There is only existing
regulation, however, for organic food products and none specifically for organic wine.
Establishing regulations for organic winemaking in Argentina would help to maintain the
quality of the product and allow for better control of the market. If regulation is
established to specifically govern organic winemaking, there is enormous potential for
growth in the organic wine industry in Argentina.

New Zealand has the highest potential for growth of the organic wine industry out
of the four regions studied. Attitudes of consumers in this region towards organic wine
are the most positive. If a national organic standard is developed based on BioGro’s
private standards, regulations would be both extremely effective and easy to understand.
Not only would the local market for organic wine greatly expand, New Zealand has the
potential to be a global leader in the production of organic wine if thorough regulations
are established.

Each region individually has the potential for growth, but the global organic wine
market overall would benefit from continued discussion concerning the differences in
organic wine regulations. Importing and exporting of organic wine will continue to be
difficult as long as the standards and regulations vary greatly from region to region. The
development of a global standard for organic wine production would facilitate trade between regions and allow for greater growth in the individual and global markets.
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