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**Italian market of organic wine:
a survey on production system characteristics and marketing strategies**

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1. Introduction

Wine is commonly recognised as a particular type of processed agrifood product, showing several different characteristics. Above all a close relationship is commonly assigned between wine and land of origin, the environment and the ecosystem in general (including not only natural aspects but also human skills, tradition, etc.), based on a complex web of interrelation between all the involved elements/operators. Since the 70s the interest on “clean wine-growing” has been increasing among the operators; this fact has also caused the development and the improving of organic processes for wine production (Iordachescu et al., 2009). For long time the legislation framework on the organic wine regulations has been incomplete and inefficient: EC Reg. 2092/91¹ and, after this, EC Reg. 834/2007² were extremely generic and through these Regulations it has been only possible to certify as “organic” the raw material (grapes from organically growing technique) and not the whole wine-making process. In 2012 the European Commission approved Regulation (EU) No 203 which allows the use of the term “organic wine” for those products complying with specific requirements and with Organic Certification. Before Reg. 203 entering into force, it was only possible to use the wording “wine made from organic grapes”.

Currently, for *organic wine* it is meant a product obtained from organic raw materials that i) uses products and (if available) substances authorised in Annex VIIIa of Reg. 203, obtained as well from organic raw materials and ii) is subject to processes and oenological treatments provided in Reg. 203. Even before this Regulation, in the wine sector many stakeholders had shown a growing interest for organic production. In Italy, and in many other countries, in recent decades a movement of producers has grown, who have started referring to their wines as “natural”, and to rely on official certification model and on Origin Based Labels (PDO and PGI). Considering the equivalence arrangement³ established between EU and US, organic certification from EU Reg. 203 must be totally accepted from the US market without any other kind of document: this is very important for the organic wine export because US consumers appear really interested in organic wine purchase (Vastola et al., 2009; www.winemonitor.it).

The wine sector interest in the environmental sustainability is also stimulated by the increasing consumers “green attitude” in their purchasing behavior; the environmentally-friendly characteristic of a product has become a significant marketing tool and useful for the differentiation on the market. It must be noted that a “only” environmentally-friendly wine cannot be sold as organic: they are two different beverages.

According to FiBL-IFOAM data, in 2010, worldwide surfaces cultivated with organic vineyards exceeded 217.60 thousands of hectares, almost doubled since 2006; more of 88% located in Europe (192,671 ha; +51%). During the period 2006-2010 North and Latin America registered interesting

1 Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs.

2 Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91. It is interesting the point 19 “(whereas...) Organic processed products should be produced by the use of processing methods which guarantee that the organic integrity and vital qualities of the product are maintained through all stages of the production chain” but this proposal has not been further specified for the wine sector.

3 The U.S. has an equivalence arrangement with the European Union (EU). This means that as long as the terms of the arrangement are met, organic operations certified to the USDA organic or EU organic standards may be labeled and sold as organic in both countries. (www.ams.usda.gov, last access 2013/11/30)

upward trends: +25% and +23% respectively. Argentina is the country in which organic viticulture is most spread in the world (4,048 ha; 2010). In EU, Italy France and Spain, traditionally wine producers, since 2000 have registered a steadily increase of the organically wine-growing surfaces, despite the lack of a clear legal situation. Nevertheless, at a worldwide level, the organically wine-growing sector still represents a small quota of the total wine production. It could be interesting to remember what Willer has emphasized in 2008 (Willer H., 2008): “the share of the organic/in-conversion grape area, however, tends to be lower than that of organic farming general because of the production based problems, the direct payments are not high enough and the competition from Southern countries to the Northern producers. There are signs of a strongly growing market for organic wine in many countries, triggered by a generally growing interest in organic products and growing demand (particularly in Europe and North America)”. INEA Data (Bioreport 2012) show that, in 2010, Italy was the second EU member in terms of organic viticulture surface after Spain, with more than 50.000 hectares and 628 certified wineries processing organic grapes. More recent data from Italian Confederations of Farmers (CIA) show that, in 2012, the Italian organically cultivated surface of vineyards overpassed 52 thousands of hectares, more than 96% of these producing grapes for wine processing. The leading Regions are Sicily (+65.5% from 2009), Apulia (+12% from 2009) and Tuscany (+12,4% from 2009).

This paper aims to analyse the main characteristics of the organic wine sector in Italy before Regulation 203 entered into force, taking into account also biodynamic and similar productions. In particular the study focuses on marketing practices, either in promotional and in strategic terms, adopted by wineries. By reflecting on the survey results, it may be possible to define the potential of European certified organic and biodynamic wine on the Italian market.

2. Literature review

The scientific literature specifically exploring the organic wine sector is currently not so abundant. Some Authors emphasize the lack of materials and data about this issue (Stolz et al., 2008; Willer, 2008) from different points of view: production, surfaces, yields, distribution channels, consumer expectations and marketing strategies. Before the 2012, without an appropriate regulation, the lack of clarity along the production chain has strengthened the purchaser’s uncertainty about the product (Vastola et al, 2009). An important outcome of the ORWINE project (see next in text) was the Recommendation for EU Rules on Organic Wine comprehending proposal and recommendations for elaborating rules for organic wine in EU Regulation on organic production and labeling of organic products. For the moment being the large part of the scientific studies focus on wine “from organically growing grapes”, without a complete certification of the process because of the extremely recent of EC Reg. 203. Thus in the research organic wine is often included in a bigger class of environmentally-friendly products like biodynamics, “natural”, “true” and other *bio-soundings* (www.teatronaturale.it, last access 2013-05-14) or non-conventional wines (Vastola et al., 2009).

One of the most complete work on the organic wine sector is the collection of studies originated from the European project named ORWINE (www.orwine.com), which surveyed many different aspects of the sector, either technological, economic and those related to sensory analysis.

There are two main fields of study in the economic literature on organic wine:

a) surveys about the wine system, mainly addressed to get a clear picture of the sector dimensions for small contexts (Crescimanno et al., 2009; Rossetto, 2002; Brugarolas et al., 2009) or for bigger ones, although in the latter case sometimes it is possible to register some lack of accuracy or precision in the data. Some interesting studies permit to define the state of the organic wine sector (Jonis et al., 2008 and others from 16th IFOAM Orwine Congress). According to Micheloni and Trioli (2008) at a European level, the organic wine-makers present medium dimension activities: only 8% of the wine

farms produce more than 1,500 hl (nearly 200.000 bottles) while 42% register a production level around 300 hl/year (40.000 bottles). The biggest wine farms are located in France and in Italy, where this production is a traditional heritage. As far as the marketing strategies are concerned, mainly distribution and price choices, in Veneto region small wine growers appear to prefer a wine quality strategy and sell their product through traditional retailing; big wineries pay attention to price and product variety and prefer foreign or domestic supermarket chains or direct selling to final consumers (Rossetto, 2002). Studies on the farm profitability (Corsi et al., 2013) enhanced that organic qualitative characteristic seems to influence the components of the wine price, like a sort of premium price obtained not only adding a plus value to the price but also acting on the price components; in any case organic wine final price appear higher than the conventional one. A general framework of the organic wine market (structures, operators, dimensions of the sector trend of the organic wine market and the consumption) also derives from the ORWINE project (particularly Stolz et al., 2008). The project emphasizes that four main obstacles appear to constrain this sector: low consumer knowledge about organic wines and production, lack of marketing strategies, strong competition deriving from the conventional products and the high price of organic wine.

b) surveys on organic wine consumer aimed to define his purchasing behaviour (including choice determinant) and needs. For the moment being organic characteristics appear not so important in the consumers' preferences, even in countries where organic food are largely common on the market (e.g. Switzerland in Mann et al., 2012). Between the most important factors determining consumer choice, country of origin, blend of grapes and price are the most important (the same of the conventional wine market). In particular, price is a fundamental benchmark for the consumer because it is considered strictly linked to the quality; price is considered often too high (Jonis et al., 2008) and "healthy" characteristic is not a sufficient reason for this (Iordachescu et al., 2009). In some cases the organic certification label also has a negative influence on the price causing its reduction; thus some American organically wine-makers do not use this label on the bottle (Delmas Magali et al, 2008). An important obstacle to the organic wine spreading is originated from a bad reputation not only linked to the wine price but also about taste (Stolz et al., 2008; Delmas Magali et al, 2008). This fact is enhanced by the literature and it appears widespread, mostly in Italy among the other EU producers (National Rural Network, 2012). According to the consumers' judgements "organic wine is good for the environment but not for those who drink it". This may be affected by several factors, e.g the inexperience of the winemakers (National Rural Network, 2012; Delmas Magali et al, 2008). Furthermore the low or even missing presence of organic wines in specialised wine shops may represent another problem (Jonis et al. 2008). Due to this, consumers easily get the impression that high quality organic wines do not exist.

3. The survey

An explorative web survey was conducted in order to collect a set of information aimed at getting a picture of the organic, biodynamic and *natural* wine sector. A questionnaire composed by four sections (firm's structure, marketing and communication strategies, interviewers' perceptions and entrepreneur's personal data) was administered to a sample of wineries.

The survey was administrated during summer 2011.

The sample included both certified organic/biodynamic wineries and producers of *natural* wine with no certification, all around Italy. The first group of firms includes certified companies extracted from Biobank and Sinab⁴ database and the biodynamic units from Demeter database; the arrangement of the

⁴ BioBank is one of the most important Italian website on the organic sector. Sinab⁴ is the Italian Information System on Organic Farming.

second group was more difficult because a specific list of Italian *natural* wine producers does not exist. Thus, the Authors collected all the firms belonging to specific Associations⁵ and to organic-biodynamic-natural producers Consortia; the list was completed with the units found in specialised websites⁶ and finally there have been considered the firms which participated at least to one specialised trade fair⁷ or exhibition during the last two years.

After a further selection⁸, the final sample frame included 891 units, located in different Italian regions. The return rate has been about 21% (186 filled questionnaires).

4. Results

4.1. Characteristics of production system

Table 1 shows the main characteristics of the sample.

Just seven companies claim that grape variety is grown according to conventional methods and that they have some hectares certified as organic or in conversion phase.

70% of the sample declared to cultivate organically some areas of their production with values between 0,5 and 101,78 hectares. The majority (63,91%) are the areas up to 10 hectares, 6 over 50 hectares and the remaining 31,58% shows intermediate values. The average of the entire sample stood at 10,4 hectares.

With regard to biodynamic producers, there are 49 companies that claim to cultivate according to this process. In this case the hectares average is less than 3 hectares per farm. 39 out of 49 declare to be 100% biodynamic producers, in other words, all wine grapes are grown by this method, while 8 companies claim to cultivate also organic vineyards.

Table 1 - Sample Characteristics

		min	max	mean	median
vineyard area (hectares)	conventional	0	286	2,8	0
	organic	0	102	10,4	4
	biodynamic	0	51	2,9	0
	in conversion	0	108	1,8	0
production (hectolitres)	conventional	0	19.600	253	0
	organic	0	8.000	479	150
	biodynamic	0	2.100	107	0
sales volume (€)		8.000	11.000.000	428.000	150.000
employees (numeber)		1	48	4,4	2

The average production is around 821 hl/year, approximately 62.000 bottles. However, this data, change significantly if the different methods of production are considered separately. The average

5 VinNatur, ViniVeri, Renaissance Italia and Triple A.

6 www.vinobio.com, www.viticolturabiodinamica.it

7 Mainly VinNatur and VinoVinoVino in Italy, Biofach in Nuremberg (Germany) and Millésime Bio in Montpellier (France).

8 The selection process excluded: organic/biodynamic firms not involved in wine production; conventional firms with no organic productions; wine cooperatives; entrepreneurs involved only in bottling phase; wrong data.

production of organic wine sample stands, indeed, at about 480 hectoliters, while the biodynamic one is about 110 hectolitres. In relation to the number of employees, the average data is quite low (4,42) and shows a reality of small companies. Nevertheless, the data are strongly influenced by some outliers within the sample: only 5% of companies claim to have more than 15 employees, while 94,54% has a lower number of employees. More specifically, less than 66 companies (36,07%) are composed just by the owner (1 is in fact the most frequent value) and two-thirds (6,85%) of the companies do not reach 4 permanent employees.

As it is easy to infer from Table 2, among the reasons that have led companies to adopt organic/biodynamic production the most important are ethical aspects (89%). 54% of respondents pointed out the qualitative factors, considering both the absence of chemical residues and specific taste of wine connected with the territory.

Regarding the economic reasons product *differentiation* from competitors (23%) and *response* to consumers and market (13%) appear less important among the other items. The *difficulty in selling a conventional product* not appears decisive (3%). Finally, government grants for organic farming do not seem to be considered among the main reasons (only 7%).

Table 2 – Reason to produce organic/biodynamic (percentage)

Ethical choice	88,5
Higher product quality	53,8
Differentiation	23,1
Demand response	12,6
European contributions/subsidies	6,6
Difficulty in selling conventional product	3,3

A five-point Likert-scale (1 = not important at all, 5 = very important) was used to measure the relative importance of the factors influencing business strategies of wineries.

Table 3 shows the mean values of respondents for each factor. The most important aspect seems to be the *quality*: 89% of respondents, indeed, gives a value of 5 on this aspect and the mean value is 4,9. Other main factors, even if with lower evaluations, are represented by *price*, *promotion* and *brand* which obtain a mean value around 3,5. *Packaging* and *certifications* are considered less important.

Table 3 – Factors influencing business strategies of wineries (mean)

Quality	4,86
Price	3,57
Promotion	3,53
Brand	3,52
Distribution	3,47
Packaging	2,86
Specialized guides	2,82
Certification	2,81
Certification of origin	2,45

As regards to the sale channels (see Table 4 below), the most used is represented by *wholesalers* and *export agents* (33%). *Direct selling* plays a key role for firms: it represents indeed the second sale channel with 29% preferences assigned and it is considered also an important way for communication.

The other channels used are represented by the *wine shops/bars* and *Ho.re.ca* which respectively reached a value of 16%.

Table 4 – Sale channels (frequency)

Wholesalers/export agents	32,8
Direct selling	28,8
Wine shops/bars and traditional retailers	16,3
Ho.re.ca	16,2
GDO	2,7
altre imprese	2,0

Regarding the Market, the most important for all the sample firms is *Italy* while *European Union* market reach a quota of 25% on the total export, followed by *North America* with 10% and by *Asia* with 5,2%. All the other countries exhibits values below 5%.

Table 5 – Markets (percentage)

Italy	56,0
UE	24,6
Extra UE	3,6
North America	9,6
South America	0,3
Asia	5,2
Africa	0,1
Oceania	0,6

With regard to different promotional tools, Table 6 shows the frequency of their use. It emerges that almost half (43%) of the wineries stated they do not use any tools to promote their wines and even a significant 39% is limited to simple brochure.

Only 12% of wineries use traditional media (television, radio, advertisement) presumably at local level. Strategic is the role of the fairs, which are becoming more important among different promotion activities. In particular, Vinitaly shows the highest participation: it was attended by almost half of the sample. VinNatur and ViniVeri obtain surprisingly results. Significant presence was registered within two foreign exhibitions: BioFach in Nuremberg, one of most important European events dedicated to organic farming, and Millesime Bio in Montpellier, focused specifically to organic wine world.

Table 6 – Advertising channels for organic and biodynamic labels (percentage)

Fairs	57,1
No advertising	42,9
Brochure	39,0
Press	8,8
Internet	8,8
Radio	1,6
Advertisement	1,1
Television	0,5

Considering the modern communication tools, it has been asked if organic and biodynamic labels were promoted by a web site and sold by an e-commerce channel. In the first case 55% winemakers answered

that they use a web site to promote and enhance their products, while the second issue was answered positively just by 16,6% of respondents. Consequently 45% of firms of the sample does not use the internet as communication tool.

Finally, 70,06% of respondents claim to propose wine tasting in order to promote their product and 89,82% of wine companies stated to organize guided tours to their cellars and to their production areas.

4.2 Cluster Analysis

In order to perform a cluster analysis 6 questions have been selected from our dataset⁹ (Table 8) and to the first of them has been applied the principal component analysis to reduce the numbers of options provided by the questions.

Table 8 - Clustering variables

Questions	N. Options	Variables type
<i>How important are the following aspects of your business strategy, in relation to organic and biodynamic production?</i>	8 (excluding experts' opinion)	Quantitative discrete
<i>Does your company make specific advertising for organic and biodynamic labels?</i>	4	Dichotomous
<i>Concerning organic and biodynamic labels your company ...</i>	3	Dichotomous
<i>What wine exhibitions and/or fairs have you attended in the last three years?</i>	5	Dichotomous
<i>Do you organize meetings and wine tastings in order to promote organic and biodynamic wines?</i>	2	Dichotomous
<i>Do you organize guided tours within your company?</i>	2	Dichotomous

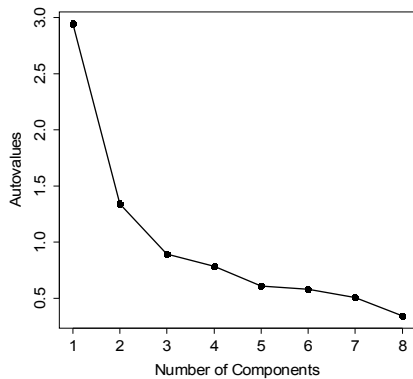
Three methods were used to identify an appropriate number of components: the cumulative variance explained by the autovalues (Table 9), the screeplot (Graph 1) and Kaiser criterion based on the average autovalue so that three components were chosen

Table 9 - Cumulative percentage of variance

	Eigenvalue	Cumulative percentage of variance
comp 1	2,947	36,831
comp 2	1,340	53,581
comp 3	0,895	64,771
comp 4	0,783	74,554
comp 5	0,609	82,168
comp 6	0,581	89,431
comp 7	0,505	95,745
comp 8	0,340	100,000

Graph 1 - Scree plot

⁹ 19 statistical units were dropped due to missing values.



The following Table summarizes the contribute (in percentage) of each variable defining new axes.

Table 10 – Loading percentage contributions

	Comp1 %	Comp2 %	Comp3 %
Product quality	2,510	22,938	57,198
Price	9,813	6,969	0,086
Distribuzione	17,613	3,079	0,023
Brand	21,452	3,876	3,885
Packaging	16,976	0,106	19,089
Comunication	15,214	10,036	0,182
Denominazione di origine	8,939	29,466	4,950
Certificazioni	7,483	23,530	14,588

So it is possible to attribute a name to the dimensions. The first component may be called *Marketing Mix*, the second *Certification* and the last *Product characteristics*.

After principal component analysis the dimension of data matrix is 162x14 and the variables are both quantitative continue and dichotomous so we use the metric “Gower” to calculate the dissimilarity matrix and the divisive algorithm PAM for clustering.

Using the average silhouette index (0,30) 4 clusters are identified.

Table 12 – Clustering variables: descriptive statistics

	C1	C2	C3	C4	Sample mean
strategic levers					
marketing mix	0,63	-0,17	-0,60	-0,20	0
certifications	0,17	0,06	-0,16	-0,22	0
product characteristics	0,21	-0,11	-0,11	-0,11	0
	C1	C2	C3	C4	Relative Frequency
advertising					
no advertising	0,18	0,19	0,86	0,97	0,48
brochure, advertisement, press	0,82	0,60	0,06	0,03	0,45
exhibitions/fairs	0,89	0,95	0,22	0,17	0,63

internet	0,22	0,05	0,03	0,00	0,09
internet usage					
promotion	0,98	0,00	0,81	0,00	0,51
selling	0,25	0,00	0,28	0,00	0,15
no usage	0,00	1,00	0,14	0,93	0,46
fairs					
Vinitaly	0,58	0,17	0,33	0,62	0,43
VinNatur	0,18	0,38	0,31	0,10	0,25
viniveri/vinovinovino	0,18	0,24	0,33	0,10	0,22
other	0,35	0,17	0,11	0,07	0,20
no fairs	0,02	0,05	0,08	0,10	0,06
other type of promotion					
wine tasting	0,78	0,69	0,78	0,34	0,68
visits	0,95	0,88	0,86	0,79	0,88

The first cluster is composed by 55 companies (34% of the sample)

Considering the clustering variables, this group assigns to the strategic levers of *marketing mix* an higher average score compared to other clusters and to the sample mean.

The other two clustering variables, *products characteristics* and *certifications*, obtain as well an higher score preference compared to the sample mean.

Looking at the communication/promotion variables, the first cluster is characterized by companies that use traditional communication means (press, brochure and advertisement) as well as more modern tools linked to the internet. Deepening those aspects linked to exhibitions and fairs, companies in the first cluster take part mainly to the most important international wine fair, Vinitaly, and to other fairs as Biofach. Finally, companies of this group show to resort more than companies of the other clusters to wine tasting and guided tours considering them very important promotion means.

42 companies characterize the second cluster (C2) - 26% of the sample. In this case the strategic levers obtain lower evaluations even under mean regarding the 4 *marketing mix* levers and the *product characteristics*, while the preference score for *certification* is coherent with the sample mean. In general terms it is possible to state that values assigned are close to sample mean.

The aspects linked to communication/promotion are much lower than in C1 and, in this case, they are identified in particular in the high participation to exhibitions and fairs, especially VinNatur event.

Cluster 3 (C3) is composed by 36 companies, 22% of the sample and it is characterized by very low evaluations for strategic levers of *marketing mix* compared to the values of the sample mean. Looking at the mean value assigned to item *no advertising*, 0,86, it is possible to state that the companies of this group do not consider important advertising. In this cluster, indeed, companies refer to specific fairs for organic wine (especially Viniveri) in order to promote their product.

Finally, within the last cluster (C4), 18% of the sample, either *marketing mix* levers and *certifications* obtain values slightly below the average of the sample. Companies belonging to this group do not use any kind of advertising or of the internet to promote their product.

Compared to the other clusters, in this case, companies that do not take part to exhibitions and fairs prevail, those companies that claim to go, stated to prefer in particular Vinitaly.

Turning to the analysis of those variables that have not been used in the clustering process and looking to data reported in Table 13, it is possible to state that companies more market-oriented (C1) are mainly

located in the central regions of Italy as it is possible to infer from Table 13. Furthermore, these companies are the biggest in dimension terms and, thus, they have at their disposal more resources from all points of view. Compared to the other clusters, companies of C1 have a broader organic production area (15 hectares), a three-year period producing average of about 760 hectoliters, which means an average annual sales volume of approximately €600.000.

In addition, firms in the first cluster show the highest number of organic labels for wine (average of 5,6). Data related to the products average price get the worst performance compared to the other clusters, the value mean of the group is indeed under 8 €/liter. With regard to distribution channels, the companies of C1 group are characterized by the use of *wholesalers/exporters* channel. Finally, by the analysis of the sales markets it can be seen that C1 presents value slightly above the average of the sample in relation to the national market.

To sum up, it possible to say that this group is characterized by better management performance than those obtained from the initial sample. This evidence confirms the hypothesis, already asserted in several empirical studies (Lynch et al., 2012), that a market-oriented approach provides the best performance from many points of view.

In group C2, it appears evident that firms are characterized by an higher level of exports towards Asian market.

Third (C3) and fourth cluster (C4) show a common trend towards biodynamic production and an high presence of companies in the Northern Italy. The number of labels, on average lower than 2, results similar in both groups. On the other hand, the groups differ for some strategic orientations. In particular, C3 shows an higher production of biodynamic wines (135 hl), while production area, sales volume and number of employees result almost halved compared to C4. The aspect that basically differs among companies of C3 and C4 is the distribution channel: the group of companies belonging to C3, indeed, assigns a value higher than the average one for *direct selling* while in C4 companies distribute their products by wine shops/bars, traditional retailers and Ho.re.ca channels.

Finally, looking at markets, it is easy to say that C3 exports mainly to EU countries, while C4 exports also to North American market.

Table 13 - Clusters profile: descriptive statistics

	C1	C2	C3	C4	Sample Mean
Distribution channels (%)					
direct selling	29,16	30,02	33,44	25,17	29,62
wine bars and traditional retailers	12,64	19,10	15,56	19,86	16,25
Ho.re.ca	14,91	15,62	15,58	19,14	16,00
Wholesalers/exporters	36,16	30,48	31,33	34,10	33,25
Markets (%)					
Italy	57,84	55,43	52,33	56,03	55,67
UE	25,95	24,38	28,11	18,45	24,68
Nord America	9,69	7,57	10,11	13,86	9,98
Asia	3,58	7,26	4,17	5,41	4,99
other markets	2,95	5,60	5,28	6,24	4,74
Average price (€/litre)	7,64	8,08	8,12	12,01	
Average number of labels					
organic wine	5,57	4,33	3,38	2,55	4,20

referred to DOC/DOCG	2,63	2,49	1,32	1,55	2,10
biodynamic wine	0,73	0,56	1,50	1,38	0,98
referred to DOC/DOCG	0,33	0,18	0,91	0,59	0,47
Average area (ha)					
organic	15,35	7,42	5,87	6,20	9,51
biodynamic	2,12	2,19	3,09	5,69	3,00
Average production (hl)					
organic	757,19	383,58	237,17	181,55	439,76
biodynamic	78,44	88,57	135,47	132,93	103,65
Sales volume(€)	596.48	292.17	267.47	527.06	441.64
	6	4	6	3	9,48
Employees (numero)	4,96	2,95	3,97	6,58	4,53
Foundation year of the company	1981	1987	1967	1979	
					Relative Frequency
	C1	C2	C3	C4	
District					
North East	0,22	0,31	0,29	0,36	0,28
North West	0,06	0,12	0,21	0,2	0,13
Central Italy	0,48	0,31	0,26	0,24	0,35
South	0,15	0,19	0,15	0,2	0,16
Islands	0,09	0,07	0,09	0	0,07

References

- Brugarolas M., Martinez-Carrasco L., Bernabeu R., Martinez-Poveda A. (2009). *A contingent valuation analysis to determine profitability of establishing local organic wine markets in Spain*. Renewable Agriculture and Food Systems: 25(1); 35–44
- Corsi A. Strøm S. (2013). *The Price Premium for Organic Wines: Estimating a Hedonic Farm-gate Price Equation*. Memorandum n. 7, Department of Economics, University of Oslo, ISSN: 0809-8786
- Crescimanno M. Ficani G.B. Guccione G. (2002). *The production and marketing of organic wine in Sicily*. British Food Journal, vol. 104, No. 3/4/5
- Iordachescu A., Moore A., Iordachescu G. (2009). *Consumer perceptions of organic wine*. The Annals of the University Dunarea de Jos of Galati Fascicle VI – Food Technology 34(1)
- Jonis M., Soltz H, Schmid O., Hofmann U., Trioli G. (2008). *Analysis of organic wine market needs*. 16th IFOAM Organic World Congress, Modena, Italy, June 16-20, 2008 <http://orgprints.org/12161/>
- Lynch J., Mason R.J., Beresford A.K.C. (2012). *An examination of the role for Business Orientation in an uncertain business environment*, International Journal of Production Economics vol. [137, No 1](#), pp 145–156.

- Mann S., Ferjani A., Reissig L. (2012). *What matters to consumers of organic wine?*. British Food Journal vol. 114, No. 2, pp 272:284
- Micheloni C., Roviglioni R., Trioli G., Comuzzo P. (2007). *Deliverable D 2.5 - Public report about the producer investigation. Part of Workpackage: WP2 - Status quo analysis of wine producer practices, marketneeds and consumers perception*. Project acronym: ORWINE. Full project title: Organic viticulture and wine-making: development of environment and consumer friendly technologies for organic wine quality improvement and scientifically based legislative framework. <http://www.itab.asso.fr> (last access 2013/11/29)
- National Rural Network 2007-2013 (2012). *Bioreport 2012. Organic farming in Italy*. www.reterurale.it (last contact: 2013/11/27)
- Rossetto L. (2002). *Marketing Strategies for Organic Wine Growers in the Veneto Region*. Working Paper WP02-4, <http://ageconsearch.umn.edu>
- Stolz H., Schmidt O. (2008). *Consumer attitudes and expectations of organic wine*. 16th IFOAM Organic World Congress, Modena, Italy, June 16-20, 2008 <http://orgprints.org/13974/>
- Vastola A., Tanyeri-Abur A. (2009). *Non-conventional viticulture as a viable system: a case study in Italy*. AAWE working paper n. 43 Business. www.wine-economics.org (last access 2013/11/29)
- Willer H. (2008). *Organic Viticulture in Europe: Development and current statistics*. 16th IFOAM Organic World Congress, Modena, Italy, June 16-20, 2008. Archived at <http://orgprints.org/view/projects/conference.html>
www.winemonitor.it (last access 2013/12/02)