

CONSUMER EXPECTATIONS REGARDING ORGANIC WINES

Arina Oana ANTOCE

aantoce@yahoo.com



Prof.univ. dr Arina Oana ANTOCE - University of Agronomic
Sciences and Veterinary Medicine of Bucharest

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ABOUT ORGANIC WINE

- DEFINITIONS OR WHAT WE KNOW AND WHAT CONFUSIONS WE MAKE ABOUT ORGANIC WINE



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Sciences and Veterinary Medicine of Bucharest

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1. Definition

It is obtained from grapes produced in accordance with the principles of organic viticulture (non-use of synthetic chemicals for fertilization, herbicides or phytosanitary treatments - insecticides, fungicides).

Organic wine



It is naturally fermented and *may or may not contain sulfites* (depending on the country), as well as other additives or processing aids permitted by law.

- ❖ *Organic products are products with a specific identity, **perceived** as being closer to nature and healthier, both for the environment and for people.*



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❖ *Different names in different countries.*

In various countries the terms **Ecologic** **Organic** **Biologic** are used for products obtained by identical or similar practices.

Biodynamic

Natural

The term "*natural*" is debatable because it *induces the idea that other wines cannot be natural*, in spite of the fact that they are obtained by fermenting a natural fruit.



❖ *Different names in different countries.*

For “**natural wine**” no legal definition is yet available, the expectations being that they are made with minimal interventions.



In the EU there is a proposal to legally define the "natural" wines.



For the regulation of these wines **organic certification may be required**, while some more practices acceptable in organic wines are discussed to be banned, among which filtration, fining, usage of selected yeasts or even cold fermentation or gas protection.

All these lead to unclear communication regarding the different practices that allow a product to be called organic.



1. What we know and what confusions we make?

Opinions about organic wines	True or False?	Explanations
<ul style="list-style-type: none"> It is a vegetarian/vegan product 	<ul style="list-style-type: none"> It depends on the technology 	<ul style="list-style-type: none"> May contain yeasts, egg white, enzymes from other sources than plants.
<ul style="list-style-type: none"> Does not contain sulfites 	<ul style="list-style-type: none"> It depends on the technology and legislation 	<ul style="list-style-type: none"> In the United States the addition of sulfites is excluded by law, in Europe and other countries of the New World it is allowed (therefore depends on the manufacturer)
<ul style="list-style-type: none"> It is healthier than conventional wine 	<ul style="list-style-type: none"> It depends on many factors 	<ul style="list-style-type: none"> There are cases and cases. Scientific research has failed to demonstrate clearly.
<ul style="list-style-type: none"> It is tastier than conventional wine 	<ul style="list-style-type: none"> It depends on your preferences and habits 	<ul style="list-style-type: none"> Organic wine, especially that produced without sulfites, may have a different flavor and taste than conventional wines.
<ul style="list-style-type: none"> It is of lower quality than conventional wine 	<ul style="list-style-type: none"> It depends on the technology 	<ul style="list-style-type: none"> With dedication and modern technologies, organic wines are of similar quality as conventional ones and not infrequently even of better quality. The research and competitions prove it.
<ul style="list-style-type: none"> It is more expensive than conventional wine 	<ul style="list-style-type: none"> It depends on many factors 	<ul style="list-style-type: none"> Often the price is not correlated with the work invested or with the quality, but with the perception regarding the quality / value.



THE CONTROVERSIAL ISSUE OF SO₂ IN ORGANIC WINEMAKING

The long debate around SO₂ has driven many wine consumers away, especially when they did not know that it is actually used, in even larger quantities, in many other products they were consuming.



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Sulfite content - Major legislative discrepancies

For organic wines, the most controversial practice is by far the addition of sulfites, thus, much debate was focused around this topic.

In USA, within the framework of past and present legislation, there was/is a **clear distinction between organic wines and wines produced from organic grapes**, as the first cannot have any added SO₂, while the latter can.

In European countries, for many years there was no specific legislation for organic wines, thus wine produced from organic grapes was the **only option**, under the general regulation for organic production (EC 834/2007, now repealed and replaced by EU 848/2018).



In the EU we *finally* have a specific law for organic wine

- In 2009 the European Commission proposed to introduce organic wine regulation, but an agreement regarding the content of sulfites could not be reached.
- **Only in 2012 a specific implementing regulation of organic wine was passed** (EU 203/2012), laying down detailed rules for the implementation of the organic products Council Regulation EC 834/2007.



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The controversial issue of SO₂ in organic winemaking

❖ Advantages: (Low/moderate concentration of SO₂)

With the approval in the EU of the use of SO₂ as antioxidant and antimicrobial, organic wines will have:

- a longer service life,
- a more stable and specific aroma (The presence of SO₂ creates in the wines the aromatic profile that the consumer is already accustomed to, as it has been shown that in the absence of SO₂ the aromas evolve differently.)
- less oxidation
- several bioactive compounds extracted (some with demonstrated positive effects for human health (resveratrol, caffeic acid and quercetin))



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The controversial issue of SO_2 in organic winemaking

- ❖ The SO_2 levels are somewhat hard to understand for consumers

Present european legislation allows the use of sulfites, but there are limits prescribed depending on the type of wine and amount of sugar in the wine.

- For organic certification wines can have an SO_2 content of maximum 100 mg/l for red wines and maximum 150 mg/l in white and rose wines, when the residual sugar is under 2 g/l.
- For the rest of the wines (which have sugar levels above 2 g/l) the amount of SO_2 can be increased by 30 mg/l compared to the levels mentioned above for wines with less than 2 g/l sugar. These SO_2 levels represent total sulfites – that is, the sum of those added by the winemaker and those present naturally in wines.



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The controversial issue of SO₂ in organic winemaking

Country	Maximum limit of SO ₂ in organic wines (mg/l)	Maximum limit of SO ₂ in biodynamic wines (mg/l)	Maximum limit of SO ₂ in conventional wines (mg/l)
EU member states	<p>100 mg/l in red wine with less than 2 g/l sugar</p> <p>150 mg/l in white and rose wine with less than 2 g/l sugar</p> <p>130 mg/l in red wine with less than 2 g/l sugar</p> <p>180 mg/l in white and rose wine with less than 2 g/l sugar</p>	<p>110 mg/l in red wine with less than 5 g/l sugar</p> <p>140 mg/l in white, rose and sparkling wine with less than 5 g/l sugar</p> <p>140 mg/l in red wine with more than 5 g/l sugar</p> <p>180 mg/l in white, rose and sparkling wine with more than 5 g/l sugar</p> <p>360 mg/l in sweet wines with <i>Botrytis</i></p> <p>250 mg/l in sweet wines without <i>Botrytis</i></p>	<p>150 mg/l in red wine</p> <p>200 mg/l in white and rose wine</p> <p>200 mg/l in red wine with more than 5 g/l sugar</p> <p>250 mg/l in white and rose wines with more than 5 g/l sugar</p> <p>300 mg/l for some exceptions listed in EU Regulation 606/2009</p>



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The controversial issue of SO₂ in organic winemaking

Country	Maximum limit of SO ₂ in organic wines (mg/l)	Maximum limit of SO ₂ in biodynamic wines (mg/l)	Maximum limit of SO ₂ in conventional wines (mg/l)
USA	<p>Addition of SO₂ is not allowed.</p> <p><i>Wine may contain up to 10 mg/l naturally occurring sulfites</i></p>	100 mg/l measured at bottling time	350 mg/l measured at bottling time

There are small differences in the case of Australia, New Zealand, South Africa, Chile, Argentine



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The controversial issue of SO_2 in organic winemaking

- ❖ **Winemaking practices gained much in precision and are easier to maintain under control**

New cleaning methods in winemaking allow the reduction of SO_2 use by at least 50 mg/l compared to the maximum values accepted for conventional wines.



By using modern winemaking equipment and carefully monitoring processes, doses can be lowered even in the case of many conventional wines, staying much under the maximum limits allowed by legislation.



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ORGANIC WINE AND HUMAN HEALTH



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Consumers' expectations regarding organic wines

- ❖ **Consumers' expectations from organic wines vary based on many factors.**

Most consumers believe “**organic**” refers to the **protection of human health by producing grapes and wines without the use of synthetic herbicides, pesticides and fertilizers,**

while the more subtle implications related to the grapevine or the environment are ignored.



As more information becomes available, the perception changes.



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Avoiding synthetic substances

- ❖ The legislation supports and imposes the **avoidance** of inorganic fertilizers and synthetic agents for plant protection.

Before 1940, when pesticides began to be used, cultures and wines were produced in the manner that nowadays is considered organic.

After a so-called “golden era” of pesticides, which saw a high degree of appreciation of pesticides, a movement appeared that favoured more sustainable approaches.

As a result, around the '70s some organic wines were already produced in Europe and the USA.

In Romania, before 1989, the use of pesticides was very limited, for financial reasons.



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Legislation elements of interest for the consumers

- ❖ The regulations for organic production (CE 889/2008; CE 834/2007) are now very clear about which products can be used and which are forbidden.
 - The dosage of certain products is closely monitored and decreased where possible.
 - For example, **the dosage of copper**, a controversial fungicide, widely used in organic agriculture but which accumulates in the soil, **will continue to be reduced**, as at the end of 2018 the European Commission revised its norms and decided to decrease the authorised dosages in viticulture **from a 6 to 4 kg/ha/year** (average for 7 years).



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Legislation elements of interest for the consumers

- ❖ Organic agriculture does not allow for the use of GMOs.

There is already **genetically modified grapevine** in Chile, France, Germany, South Africa and USA. It is not approved for commercial uses.

A **GM yeast** - ML01 – was approved for use in the USA as well as in Canada, Moldova and South Africa. Because the wine labelling legislation does not require listing GMOs, they can be present in conventional wines from these countries, and in wines “made from organic grapes” in the USA.



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Legislation elements of interest for the consumers

- ❖ In the new legislation we have clear lists of **substances and practices forbidden** in organic winemaking.

For example, various treatments are forbidden, such as:

- Addition of sorbic acid or sorbate
- Addition of ammonium sulfate
- Ammonium bisulfite
- Acidification with malic acid
- Use of carboxymethylcellulose
- Use of polyvinyl-poly-pyrrolidone
- co-polymer PVI / PVP,
- Potassium ferrocyanide,
- Calcium phytate
- Thermal treatment

and so on.

These treatments are **allowed in conventional winemaking for some of their desirable effects in wine**, mostly for chemical and microbiological stabilization.



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Consumers' expectations regarding organic wines

- ❖ A study on consumers from France, Italy and Spain showed that, in general, there is a positive perception of the effects of wine on human health.



Wines with an organic label are indeed perceived as more healthy than conventional ones, but only among French and Spanish consumers with a higher interest in environmental problems.

On the other hand, consumers more involved in wine matters do not believe that a wine labelled “organic” is necessarily better for health than a wine without such certification.



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Consumers' expectations regarding organic wines

- ❖ Until now no study has proven in a reproducible and undeniable way that organic wine is more healthy.

Some studies tried to show evidence of positive changes in the chemical composition of organic wines.

- ❖ **Scientific proof is scarce and research was not able to show consistently that organic wines have a higher nutritional value.**

The main results show that there are no significant differences in nutritional qualities between organic products and conventional ones, even if the different cultivation technologies do cause variations in the metabolic pathways of the plant and lead to differences in the accumulation of certain compounds in the fruit.



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Consumers' expectations regarding organic wines

Often the results are not stable, because every grape variety may behave differently in various microclimates.

For example, results obtained in the Murfatlar region, Romania, showed that, apart from the fact that large variations were caused by specific conditions in a particular year, a larger concentration of polyphenols and beneficial aroma were obtained in Feteasca neagra variety cultivated conventionally, rather than organically (Antoce and Cojocaru, 2018), while Cabernet Sauvignon comes up of a better quality when it is produced organically (Artem and Antoce, 2018).



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Consumers' expectations regarding organic wines

Some other times, the small number of samples leads to inconclusive results.

An Italian study (Micelli and collab., 2003) on 15 red wines of various quality (table wines, DOC wines) noticed that **organic wines ecologic** showed **significantly higher concentrations of polyphenols**. Compared to an average of 2148 mg/l total polyphenols in DOC wines, an organic wine displayed a concentration of 2540 mg/l.

The concentrations of resveratrol were higher in organic wines, on average 1.69 mg/l, while in the DOC wines and table wines they were 1.16 and 1.18 mg/l, respectively.



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Consumers' expectations regarding organic wines

Some other times the experimental conditions show no differences.

Another study of 2015 (Garaguso and Nardini) showed that the total amount of polyphenols and flavonoids was not influenced by organic winemaking, the numbers being similar in **red wines produced without addition of sulfites** (conventional or organic).

The antioxidant activity was similar in red wines, conventional and organic.



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Consumers' expectations regarding organic wines

- ❖ **Only few consumers are interested in lower doses of SO₂ in wines, especially when this is associated with a lower quality**

A poll on 223 consumers recruited in a beverages shop investigated the perceptions regarding wines with sulfites and the willingness to pay for non-sulfite wines. Results showed that what matters most is **quality and price**, while the differences due to labels showing with or without added sulfites were only marginal.

The consumers did not appear willing to give up on quality in order to get a lower content of SO₂.

Only the sub-group of consumers who reported headaches after consuming wine were receptive to the commercialization of wines with a reduced content of SO₂.



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QUALITY AND PRICE IN ORGANIC WINE; INFLUENCE OF THE ATTITUDE TOWARDS ENVIRONMENT PROTECTION



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Quality of organic wine

- ❖ Organic wines are rarely recognized as having a higher sensory quality.

At the beginnings of organic winemaking results were not much appreciated by consumers because prices were high and the products were **far from being perceived as premium quality.**

This negative reputation of organic wines proved tough to overcome and still persists on certain markets, in spite of obvious progresses.



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Quality of organic wine

- ❖ The quality of organic wines has been improving and can be demonstrated in blind wine tasting sessions.

More and more organic wines participate in international contests and are awarded medals, sometimes while competing with all the other types of wine.



...but in most cases they participate in a special category reserved for organic wines.



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Price of organic wine

- ❖ **The higher prices is a major limiting factor with multiple implications.**

Since the price of wine is also a marker of quality, the higher price of organic wines can be perceived in various ways by consumers, depending on the market segment.

A German study of 2018 found that

- ✓ In the category of **low priced wines**, the prices displayed by organic wines were **perceived as extremely high**.
- ✓ In the segment with higher prices (**premium**), the price was perceived as a **signal of quality**, in the case of organic wine and conventional wine as well.



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Price of organic wine

- ❖ **Reduced willingness to pay a higher price just for environment protection.**

Consumers are interested in sustainability and environment protection but they grant a higher importance to the hedonic characteristics of the products.

Even though consumers recognize the environmental value of organic foodstuffs, they are not willing to pay the supplementary costs required for producing them.



For low-income consumers, in spite of their positive attitude towards the environment, the price of the wine is still an obstacle.



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Price of organic wine

Until now the limited market of organic wines has stabilized around a price range of 5-10 EUR / bottle, the majority of wines being sold very young.

However, there are organic wines which can be aged for as long as 20-30 years, provided that the grape harvest was of great quality and good acidity. This is true especially in case of wines made of over-ripen grapes or in the case of ice wines.



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Quality / price of organic wine

- ❖ Organic wines are not perceived as belonging to the “premium” category or as “terroir wines”.

They are considered consumer goods.

Thus, when selecting a wine, connoisseurs go straight to the shelves with wines of a certain region – not to the shelf with organic wines.



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Quality / price of organic wine

Sometimes, paradoxically, advertising an organic label can be perceived as a sign of inferior quality.

- A study published in 2017 showed that, because of the belief that organic wine is produced in viticultural regions less suitable for winemaking, some consumers buy it only when the price is lower than that of conventional wines of identical quality.

Wine consumers prefer conventional wines, more expensive, if they originate in famous regions, known for high quality.

- Because of this behaviour, authors reached the conclusion that an organic label may cause a disadvantage to the wine bearing it.



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Quality / price of organic wine

- ❖ There is a growing global movement towards sustainability.
- ❖ Increased communications regarding the environment issues may help the development of the organic wines market.

It was noticed that those consumers with strong pro-environment attitudes are the ones that spend the most for buying organic wines and other sustainable products.

- ❖ New generations are more interested in a “green” life, and some countries are more interested than others.



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CONCLUSIONS

- ✓ The production and sales of organic wines in Europe are showing unprecedented growth.
- ✓ Consumers are more welcoming towards organic wines, although there are different segments of consumers, with different motivations.
- ✓ Organic wines grew significantly in quality thanks to more coherent legislation but also due to technological progress.
- ✓ In this international context Romania can benefit from an increase in the production and consumption of organic and biodynamic wine, with a chance of catching up to the more advanced countries in this field.



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THANK YOU FOR YOUR ATTENTION!



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