

NATURAL FACTORS DETERMINING THE DIVERSITY AND INFLUENCE WINE QUALITY

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ABSTRACT

The present study is a short review and highlights in a concrete manner the main natural factors that determine the diversity and influence the quality of wines. Thus, from the category of natural factors that determine the diversity and quality of wine, the grape variety, the climatic factor, the soil and a special factor, the wine cultivation technology or the wine-making technology are highlighted.

Wine can be considered as the most complex food product with over 1,000 volatile compounds being considered as "sun, soil and soul".

INTRODUCTION

Defining wine, in the context of this study, it can only be considered a perfect combination of variety, soil, sun and technology. Thus, by definition, we discover the main factors that constitute or influence the diversity and quality of wine.

Taking into account the quality perspective, in case of wine we can distinguish two main categories of characteristics: analytical quality characteristics (sensory characteristics, physico - chemical characteristics, typicality, authenticity) and a category of special characteristics, related to the notoriety of the wine, in consumption, the organoleptic qualities, the level of culture and the civilization of the consumer.

Paraphrasing Aurel Popa it can be revealed that "the main features of the great wines could be: the purity and fineness of organoleptic qualities and their particularly pleasant and appealing character; great stability, expressed by a very durable clarity, constitutive harmony marked firstly by the absence of any excesses or shortcomings; a striking personality stemming from the character of as many characters as possible." In this line of thought and in line with current consumer requirements, the appreciated features change, and these are in a continuous evolution.

2. NATURAL FACTORS DETERMINING THE DIVERSITY AND WINE QUALITY

Natural factors are directly related to the quality and diversity of wine, are strongly related to the vine culture, can decide the opportunity of cultivating a certain vine variety in a certain area, and finally are those who determine the quality of wine. Depending on the natural factors, valuable compounds or some wine personality components accumulate or not.

2.1. Grapes variety

Grape variety is the main factor determining both the quality and the diversity of the wine. Taking into account the point of view of diversity, the grape varieties can be grouped into three main categories: white grape varieties, red grape varieties and aromatic varieties, from the point of view of the quality level we have: high quality grape varieties - Chardonnay, Sauvignon Blanc, Grasă de Cotnari, Fetească Albă - for white wines; Fetească Neagră, Cabernet Sauvignon, Pinot Noir, Merlot - for red wines; Tămâioasă

Românească, Muscat Ottonel, Busuioacă de Bohotin – for flavoured wines; Riesling Italian, Fetească Regală, Aligote – quality grape varieties and grape varieties for current consumption - Galbenă de Odobești, Zghihara de Huși for white wines, Oporto for red wines. (Viorel Stoian, "The Great Book of Wine Tasting", 2011, Agricola Publishing House, Bucharest)

Each grape variety highlighted has in its structure the necessary compounds to obtain the type of wine that meets the requirements of product standards and market requirements.

2.2. Climate and soil

Romania is one of the major wine - making countries in the world. The climate and soil conditions of the vineyards offer important favorable conditions for obtaining high-quality wines.

In the 8 great wine – growing regions of Romania, there are 143 wine cellars ("Wine cellars in Romania"), could be found characteristic micro-climates and 22 soil types, each with structure, fertility, chemical composition and different texture.

Each vineyard has an average of 3 to 15 soil types. Visible influences on wine offer calcareous, skeletal or ferruginous soils. Very fertile, rich soils help to produce record productions, but without superior qualities.

Calcareous soils provide nutrients for grapes to produce high acidity wines with very strong and bold flavors.

Sandy soils help oenologists get elegant wines with very strong flavors, but with deficiencies in tannin content and color strength, which are less intense. Strong wines, with strong extract and intense colours are obtained from grapes grown in clayey soils.

Softness, lower acidity acquire wines obtained from grapes grown on alluvial soils with high limestone content and in cold areas.

Temperature, as a climatic factor, decisively influences the quality of grapes intended for winemaking. There are three microclimates in the country according to temperature, microclimates that provide due to the temperature favorable conditions for obtaining high quality wines. Thus, from this point of view, for the obtaining red wines, the most fertile areas are Dealu Mare, Mehedinți, Dolj and Banat. In these areas, due to the temperatures and the duration of sunshine, the grape color compounds are strongly developed, producing high quality wines.

In these areas, due to the temperatures and the duration of sunshine, the grape color compounds are strongly developed, producing high quality wines. In areas where the temperatures are lower, with longer and cool autumns, the acidity of the grapes is high, the aromas are fine and found in an elegant manner in the composition of the obtained wines. Well – known areas of this kind are located in Transylvania - Târnave, Alba, Sebeș, Apold, Aiud - Ciumbrud; from Crișana - Maramureș - Diosig, Biharia, Halmeu, Rătești, Sylvania and in the northern part of Moldavia/ Husi, Vaslui, Iași.

Moderate temperatures in areas with long, hot and dry autumn provide conditions for the over - maturation of grapes, which can be used as raw materials for the production of aromatic wines. Romania has three areas that meet these conditions: Cotnari vineyard, Murfatlar vineyard and Pietroasa vineyard.

2.3. Precipitation amount

This factor is crucial in the vineyard culture, which needs large amounts of water to grow and produce the highest quality sort of grapes. Evolution in this area required solutions to combat droughts by developing modern irrigation systems.

The amount of water should be absorbed into the soil to ensure the level of hydration required to maintain the vineyard, and by water it absorbs from the soil extremely useful substances such as iron and nitrogen.

3. TECHNOLOGICAL FACTORS

Unlike natural factors that have limited action over time, technological factors influence the evolution of vine and wine for a long time, being always tributaries to the evolution of science in general and oenology in particular.

From a technological point of view, the subject has to be dealt with from both perspectives - viticulture technology and grape processing technology and wine care and conditioning.

3.1. Vine culture technology

In the specialized language, we meet the technology of cultivation and maintenance of the grapevine under the name of agrotechnics. It takes into account all the vegetation factors, the soil works and the type of aggregate used, the total weeds in the crop and the ways of combating them.

In recent years, due to the exigencies of new players in the wine market, agrotechnical studies have gained weight, those implied in this aspect, according a considerable importance for this fact. Thus, new agrotechnical procedures have been developed, procedures allowing to obtain a high quality wine. Agrotechnical works have undergone major changes, developing technologies specific to vineyards in accordance with climatic and soil factors. For the vineyard area of Transylvania, the work of the research teams at the Research and Development Research and Development Center for Viticulture and Wine Making, Blaj concluded that for this area the problems encountered by viticulture can be countered by land improvement and soil improvement. It is recommended to tillage the crop land by scraping and cutting and driving systems with annual replacements for periodic replacement and for the form of semi - high stems.

In terms of grape quality, agrotechnics plays an important role, which directly influences the accumulation of substances in grapes and their health. In this context, the hub load and harvest time are very important. The optimum time of harvest is determined individually for each plot separately as an important factor in determining the type of wine to be obtained.

3.2. Grape processing technology

The technological operations that make up the technological process of grape processing and the transformation of must into wine are the same from prehistory to nowadays, with small changes imposed by the scientific development. Technology is able today to control the winemaking process and correct the negative influences that can affect the wine quality.

The process of winemaking according to the presence or absence of air is divided into two categories - oxidative winemaking and reductive winemaking. Both technologies can apply to both white, red, and aromatic grapes.

Oxidative winemaking is the classic one, which during the primary processing of grapes does not forbid their contact with the air or the oxygen in it. This type of controlled technology is called maderization and it is specific for obtaining special wines such as, Madeira, Malaga, Porto, Tokay, etc.

Reducing winemaking is relatively modern, based on the classic one, but during primary winemaking the presence of oxygen is controlled, which allows the preservation of primary grapes and the promotion and preservation of secondary flavors during fermentation. As a result of this technology, are obtained wines which preserve their freshness, fruitfulness and variety personality.

The wines thus obtained have the advantage of immediate marketing, being clear and stable. It is suitable for white and semi - aromatic white wines.

In case of red and aromatic wines, complementary technological processes such as malolactic fermentation, barication or sticking are needed.

CONCLUSIONS

Wine can be considered one of the wonders of the world. With multiple and beneficial properties for health, it can be considered food.

The variety of wines is given by the grape variety, the place of its cultivation, the existing climate, and the used agro-technology.

The most important natural factors influencing the diversity and quality of the wine are: grape variety, soil type, climate.

Taking into account the applied technologies, it is remarkable the one developed in the field, the work of viticulturists and the activity developed by the oenologists in cellars, both having a decisive role in the diversity and quality of wines.

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