

Relevance of the production of non-alcoholic wines

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Abstract. The demand for alcohol-free wine is increasing due to the health risks associated with alcohol and the trend towards healthier living. With the onset of the Covid-19 pandemic, there has been an increase in alcohol consumption, but the interest in alcohol-free wines is growing. The global demand for non-alcoholic wines is expected to grow by 10% annually from 2023 to 2033, and the market is currently evaluated at \$2 billion, and estimated to reach \$5.2 billion by 2033. Despite the technological challenges, wineries expand their product range and develop new opportunities for entrepreneurs.

During last few years, alcohol-free wines have attracted the interest of winemakers, researchers, and consumers. This is mainly due to the health risks associated with the consumption of alcoholic wines, as well as the global trend towards a healthier lifestyle.

The outbreak of Covid-19 in early 2020 has become the most obvious global crisis of the current decade; the important thing is that, unlike trade disputes, environmental disagreements, or changes in government, this is a crisis that has immediately and directly affected the lives of the entire world population. This created a context of uncertainty that stimulated more or less anxiety for many people and changed the way of life for almost everyone.

One of such crises effects leads to encouraging some people to seek comfort and security as the world around them loses these advantages, or to forcing them to reevaluate their lives in order to live “better,” or perhaps to continue tenaciously maintaining their lifestyles in spite of all the pressures of change. Alcohol, consumed in various forms, can be present in any of these reactions, so there has been an increase in alcohol consumption worldwide in the early stages of the pandemic, particularly in the context of anxiety. In particular, the focus is on the differences between professionals in the drinks industry and non-professional wine lovers, and in their way to explore and (perhaps) to change their consumption behavior differently in face of the crisis. A particular attention is paid to wine and wine professionals, but all types of alcoholic beverages are covered to some extent.

In addition, the consumption of alcohol has attracted the attention of the governments. More restrictive regulations regarding alcohol consumption and liability have been implemented in recent years.

The awareness campaigns were focused on the message of reducing alcohol consumption for social and personal reasons. So, for the wine sector it is important to consider the reaction to these political signals and to analyze the growing consumer interest in products that contain less alcohol than traditionally associated with wine.

The scientific base allows us to conclude that the assessment of the current market and forecasts of demand trends for low-alcohol wines, as well as other products obtained by dealcoholization, are quite problematic due to the lack of data and relevant research. However, the few available sources provide important information, even if it is presented by a partial analysis and is mostly limited by a specific geographical context.

In the second half of the decade 2000–2010, alcohol-free products were more in demand than products with an alcohol content of 0.5%-4% vol.

These alcohol-free drinks, first introduced to the market about 20 years ago, are usually labeled as “less than 0.5% of alcohol.” This alcohol content is low enough to exempt the product from the regulation of alcoholic beverages in most jurisdictions, and manufacturers often note that freshly squeezed orange juice can contain a similar amount of alcohol due to natural fermentation.

An additional benefit of giving up alcohol is a reduction in calories by about one-third. In addition, the positive effects are associated with red wine. Recent studies have shown that the powerful antioxidants in red wine may reduce the risk of heart disease; the same antioxidants, called catechins, are also found in dealcoholized red wine.

Alcohol-free wines have similar taste properties as ordinary wine, so their consumption is safer for human health.

The global demand for alcohol-free wines is expected to grow by average 10% from 2023 to 2033, and the average volume of alcohol-free beverages per person in 2023 will be 178.60 L.

The global alcohol-free wine market is currently evaluated at US\$ 2 billion and is estimated to reach a market size of US\$ 5.2 billion by 2033 [1].

Nowadays many wineries have been expanding their range of products and introduce alcohol-free wines into the production line. One of the main reasons of the growing demand for alcohol-free wine is the trend towards a healthy lifestyle. Today, more and more people pay attention to their health and refuse or limit alcohol consumption. Alcohol-free wine becomes a great alternative for those who want to enjoy the pleasant sensations of wine consumption. In addition, production of alcohol-free wine opens new opportunities for winemakers and entrepreneurs, they can expand their range of products and gain place at new markets. Considering the favorable trends in increasing demand for alcohol-free drinks, their production can become one of the key areas of development.

From a technological point of view, the production of alcohol-free wine is more complicated and involves a longer process than the production of regular wine, as it requires special technologies and equipment for the extraction of alcohol. However, with the development of technologies and the availability of an appropriate scientific and technical base, this process is becoming more accessible and effective.

Several technological advances have been made to reduce partially alcohol content in finished wines. Dealcoholization of wine is mainly achieved by physical dealcoholization methods such as reverse osmosis, osmotic distillation, pervaporation, vacuum distillation, and rotary cone column. These methods can partially or

completely reduce the alcohol content in finished wines while maintaining a significant concentration of aromatic compounds in the wine. The reverse osmosis and the osmotic distillation are increasingly used for the dealcoholization of wine. These methods do not produce any waste except water and ethanol, that is economically beneficial.

These processes turn wine into syrup, which is later turned into wine; some wineries use water for the reconstitution, while others use grape juice or grape concentrate. The result of the process is the same: a product that looks and tastes like traditional wine but contains less than 0.5% of alcohol.

Some publications note the change of the organoleptic characteristics of wine materials after dealcoholization: in the condition of alcohol absence, the intensity of aroma decreases, and the feeling of acidity increases in the characteristics of white alcohol-free wines, and excessive astringency in red samples is felt. Therefore, in the technology of alcohol-free wines, it is recommended to use wine materials from aromatic grape varieties with moderate acidity and lower content of phenolic compounds, that determine the astringency of wine materials

So, in Ukraine, the production of alcohol-free wine can provide a competitive product for the market and become an important part of the development of the national wine industry.

References

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