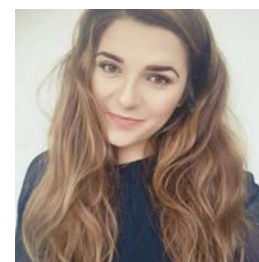


# Секція 1. АГРОІНЖЕНЕРІЯ AGRO ENGINEERING

## THE IMPACT OF THE PRODUCTION PROCESS ON THE QUALITY OF SPARKLING AND CARBONATED WINES

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The origins of wine predate written records, and modern archaeology is still uncertain about the details of the first cultivation of wild grapevines. It has been hypothesized that early humans climbed trees to pick berries, liked their sugary flavor, and then began collecting them. After a few days with fermentation setting in, juice at the bottom of any container would begin producing low-alcohol wine. The earliest archaeological evidence of wine produced from grapes, has been found at sites in China (c. 7000 BC), Georgia (c. 6000 BC), Iran (c. 5000 BC), Greece (c. 4500 BC), and Sicily (c. 4000 BC). The oldest evidence of wine production has been found in Armenia (c. 4100 BC).]

Regulations govern the classification and sale of wine in many regions of the world. European wines tend to be classified by region, while non-European wines are most often classified by grape. Market recognition of particular regions has recently been leading to their increased prominence on non-European wine labels. The oldest and most common division of wines is based on the color of wine and thus coincides with significant production differences and character traits.

Nowadays the market is full of wines of different quality, in different price range. The sparkling and carbonated wines are the distinguishing wines in the market. In general, sparkling wine is a wine with significant levels of carbon dioxide in it, making it fizzy. While the phrase commonly refers to champagne, EU countries legally reserve that term for products exclusively produced in the Champagne region of France. Sparkling wines are produced around the world, and are often referred to by their local name or region. Fermentation of sugar into alcohol during winemaking always means that carbon dioxide is released. Carbon dioxide has the property of being very soluble in water (the main constituent of wine), a property that is utilized in sparkling wines. A short version of the production process is: production always starts from a base wine (where the carbon dioxide from the first fermentation has been gasified). The sparkling quality of these wines comes from its carbon dioxide content and may be the result of natural fermentation, either in a bottle, as with the traditional method, in a large tank designed to withstand the pressures involved (Charmat process), or as a result of simple carbon dioxide injection in some cheaper sparkling wines. There are many production methods for sparkling wines. All methods of producing this type of wine have one thing in common: the production of the right amount of carbon dioxide in the wine to make it sparkling.

The aim of the study was a comparative analysis of selected physicochemical and sensory parameters of samples of sparkling and carbonated wines in terms of their impact on the production process.

The substantive hypothesis was formulated and verified:

- The use of a diversified production process affects the physicochemical and sensory values of the tested products.

Based on the organoleptic and physicochemical tests which were carried out on tested wine samples, it was found:

- good (carbonated wine) and very good (sparkling wines) sensory quality of the wines tested;
- compliance of physicochemical indicators in all samples with the requirements of PN-A-79122: 1996 / Az1: 2001;
- statistically significant differences between mean values of total acidity expressed as tartaric acid.