

1. Read this text about sustainability in vineyards.

SUSTAINABILITY OF WINE PRODUCTION

Wine production is one of the most important agricultural activities around the planet. The main production areas are in Europe (Italy, Spain, France, Germany and Portugal), America (USA, Argentina and Chile), as well as Australia, South Africa and China. The production of wine involves the use of a large number of valuable resources, such as water, fertilizers, and other organic products. Moreover, it produces a large amount of wastewater and organic waste that must be treated adequately to avoid contaminating the areas of production. The nature of the waste produced depends very closely on the specific vinification procedures, which also affect the physical–chemical properties of the residual material generated, whose characteristics determine its subsequent use and even condition the subsequent specific recovery circuit in which can be integrated.

With the purpose to contribute to a healthy environment, the wastes through mechanical, chemical or biological processes are used as raw material for new products and applications. It is the so-called circular economy aiming at “zero waste” society.

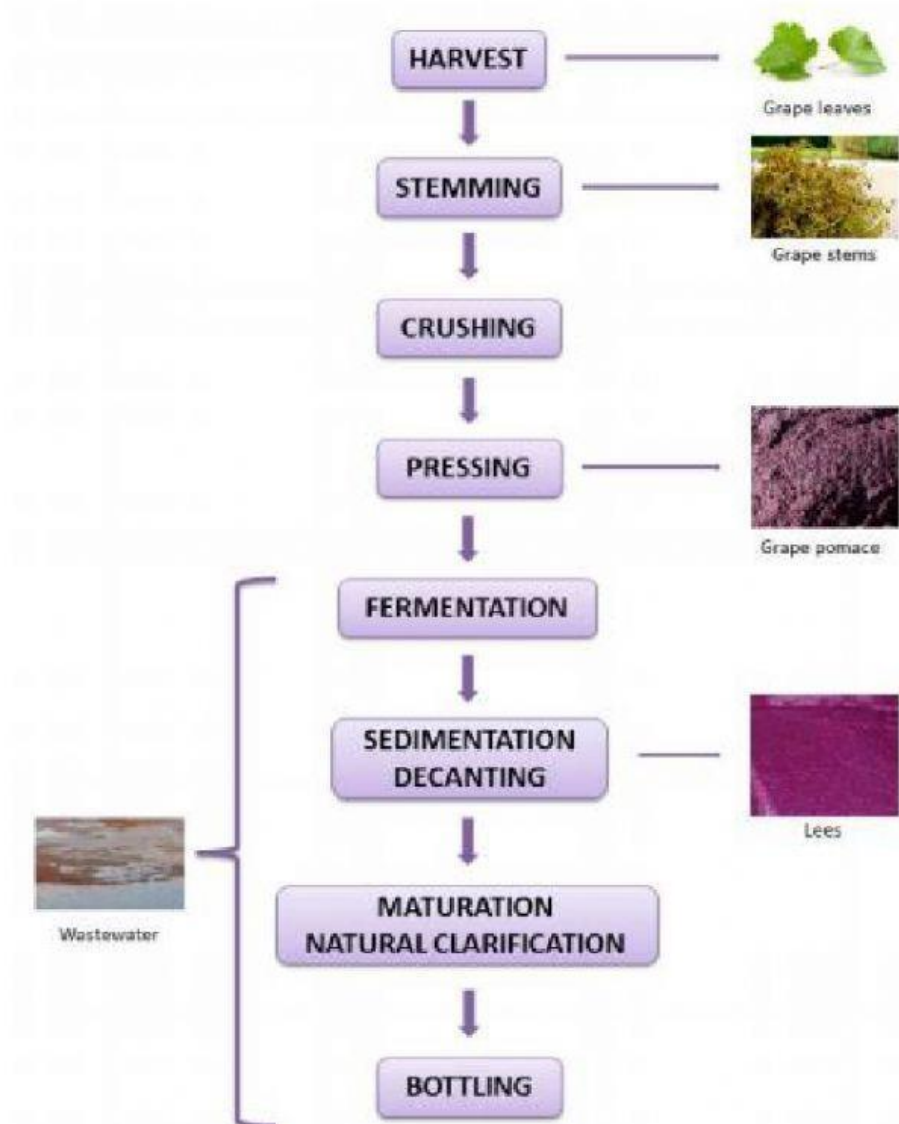
The wine industry is one of the most powerful in different regions of the world. The amount of land dedicated to the cultivation of the vineyards turns this into one of the main agricultural activities of the human being. This large amount of production is associated with the use of a large number of resources, both in terms of water consumption and the use of organic and inorganic products (fertilizers). Sustainable wine production should be associated with the correct use of these elements both in the fields and in the cellars. Vine cultivation itself and basically wine making in cellars produces high amounts of waste and side-off products, including pomace, seeds, stems, prunings, yeast and bacteria lees, organic acids (tartrate), CO₂ and water. Unfortunately, only a few quantity of these materials are used for fertilization, animal feed, or generation of other products. Moreover, the by-products of wine can be used for valorization of functional ingredients or bioactive phytochemicals that can be devoted to the generation of pharmaceutical, food, and cosmetic ingredients.

Sustainability can be understood as the process of reduction of residues and its subsequent treatment in the elaboration of the wine. This implies, within the production chain, an adequate management of resources in terms of water and energy efficiency, both in vineyards and wineries. Sustainability will grow in importance in the minds of people, since climate change is a reality in the 21st century. The traditional winemaking processes are carried out through practices with hundreds of years of tradition. The resources used, both in terms of people and equipment, have not changed much in that time. Therefore, the application of new technological resources designed to reduce the amount of waste generated during the process is by no means an easy task. Markets demand new end products, and today's societies require that these be produced in an environmentally friendly way. All this must be done within an increasingly demanding legal framework. Processes must be efficient as well as legal.

Among the by-products generated in greater quantity in the wineries, we highlight the grape pomace and stems (GPS). These by-products are not toxic in themselves, but their high organic matter content, together with the fact that they are produced in a high seasonal manner, make them a serious environmental problem. However, it is not easy to diminish waste production in wine production processes, as some of the practices are based in traditional processes, limited by physical infrastructures or human resources. Consequently, it is important to develop valorization procedures, leading to the implementation of waste management in the wine industry. Thus, taking into account that markets increasingly demand new end products, along with the environmental implications of the environmental risks associated with the activity, legislators have been led to generate an appropriate legal framework. On the one hand, this must support improvements in the processes of both the recovery of by-products and the recycling of waste, and on the other, ensure the efficiency of production processes.

Although winemaking is considered as an environmentally friendly process, during the wine production process between 1.3 and 1.5 kg of waste is generated per litre of produced wine, 75% of which is wastewater [12]. The other major residues from wine-making activity are represented by: organic wastes (grape pomace, containing seeds, pulp and skins, grape stems, and grape leaves), wine lees, emission of greenhouse gases (CO₂, volatile organic compounds, etc.), and inorganic wastes (diatomaceous earth, bentonite clay, and perlite). A total of 14.5 million tons of grape by-products are produced annually in Europe alone.

If we first evaluate the type of waste generated in a winery, it does not seem to be interesting from an economic point of view. Moreover, they do not usually generate added value, so the first option is usually to get rid of them in the most effective and economically viable way. With these premises, the efforts of the scientific community should focus on changing this negative perception, and look at the waste products of wine production as an interesting by-product from an economic point of view, which can be eliminated, but is also profitable and a part of the overall business of wine production.



2. Now, read about adverbs and adverbial phrases. Do you know what they are used for?

What is an adverb?

- A. An **adverb** describes a verb or an adjective. A primary function of adverbs is to modify verbs. Adverbs can describe when, where, or how about an action.

When: *After breakfast*, he goes to work.
Where: He went *upstairs*.
How: He *quickly* ran to the bathroom.

- B. Adverbs modify verbs, adjectives, or other adverbs.
 She *seldom* wrote after she moved away.
 The *severely* wounded man was taken to the hospital.
 The witness spoke *very nervously* about the robbery.
- C. Many adverbs are formed by adding the suffix -ly to adjectives: quick ~ quickly, happy ~ happily, careful ~ carefully, bitter ~ bitterly:
 She swims *quickly*.
 He opened the window *carefully*.
- D. Adverbs can also modify adjectives, thereby augmenting their meaning:
 They are *extremely* sad.
- E. Several adverbs express time, for example, tomorrow, today, never, soon, yesterday, yet:
 My parents are supposed to arrive tomorrow.
 Will you be off the phone soon?
 Has Jimmy taken his shower yet?
- F. Some adverbs can be placed in the middle of a sentence, and they generally have a set position there. Mid-sentence adverbs stand in front of verbs in the simple present and simple past tenses. They follow forms of be in simple present and simple past tenses, and they stand between an auxiliary verb and a main verb.

BEFORE SIMPLE PRESENT AND PAST TENSES

We seldom have dessert after dinner.
 My brother often spent his free time playing his guitar.
 I rarely talk on the phone for more than a few minutes.
 Tom frequently asks an embarrassing question.
 We *desperately* needed to get gas for the car.

FOLLOWING SIMPLE PRESENT AND PAST TENSES OF *be*

Anna is always there on time. Bill was sometimes late for an appointment.
 Her husband is never around when she needs him.
 The children are apparently in very good health.

BETWEEN AN AUXILIARY VERB AND MAIN VERB

John can never face his parents again.
 Anna has always gotten there on time.
 They have often traveled abroad.
 Do you regularly shop in this store?

- G. You can have more than one adverb or adverbial phrase in one sentence, sometimes describing separate verbs or adjectives:
Hopefully I finish this paper *by tomorrow* or I will be in *really* big trouble.
- H. Adverbs can be one word or a group of words. A group of words that function as adverbs is called an **adverbial phrase**.
After the game, the king and pawn go into the same box.
At the end of the day, they wanted to lie down.
 We will escape *when the sun rises*.

She said she likes washing the dishes *in the morning*.

He went to the island *to find gold*.

People who say they sleep *like a baby* usually don't have one.

Compare these examples:

- Jack will sit **quietly**.
(This is a normal adverb. This example has been included to prove that "in silence" is an adverb.)
- I will sit **like a monk meditates**.
(This is an **adverbial clause**. It includes a **subject** ("a monk") and a **verb** ("meditates").

3. Let's practice

Write the adverb in each sentence next to the sentences

We hurriedly ran out of the burning building.

I rarely take any breaks in the morning.

Loudly, the teenagers moved through the school corridors.

She finally went to the grocery store after running out of toilet paper.

He often read the Bible in the morning.

The library receives a copy of the newspaper biweekly.

Our manager spoke to us seriously about behavioral issues.

The children ended by playing indoors.

Catherine regularly brings coffee to her co-workers.

I was still stuck in traffic.

Perhaps we will fly to Atlanta next month.

Choose the words that correctly complete each sentence

1. Joseph is a _____ writer. He writes _____.
2. Catherine asked me an _____ question. I was unable to answer her question, but my friend Anjali answered it _____.
3. Pedro speaks _____ He has a _____ voice.
4. Because the movie had already started, I entered the movie theater _____.
5. Sophie _____ liked the boy.
6. Ali speaks Arabic very _____ He has very _____ pronunciation.

Now, take 6 adverbs from the text about sustainability in wine production and rewrite some adverbial phrases that you find within the text in the box below