

## Organic wine

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Until recently, wine could only be labelled as 'made of organic grapes'. However, after a new legislation was implemented in 2012 within the EU, it is possible to label wine as an organic food product.<sup>1</sup> Organic wine, however, still remains a niche product on the European market.

## The ORWINE project

Between 2006 and 2009, the EU-funded project ORWINE examined environmental, health, market and product quality issues related to European wine industry in order to develop guidelines for organic production. As a result, the project provided scientific evidence supporting the development of a legislative framework for organic wine production. The European legislation was then advanced based on this research.

## Organic vineyards

Conventional viticulture (grape production) is among the most pesticide-consuming agricultural systems.<sup>2</sup> This can result in pests building resistance to pesticides and cause a negative impact on non-targeted organisms.<sup>2</sup> Vineyards that implement organic farming techniques do so with the aim of improving soil quality, bringing about an equilibrium in the ecosystem of the vineyard, and encouraging natural defense mechanisms of the plants.

In Europe, vineyards are mostly located in temperate regions that often host rare and endangered varieties of plants and invertebrates.<sup>3</sup> This makes the natural vineyard ecosystem an important one to preserve.<sup>4,5</sup> Organic farming encourages the proliferation of beneficial arthropods in the vineyard which in turn help in managing pests.<sup>3</sup>

According to some recent studies, organic wines contain lower amounts of pesticides compared to conventional wines, but further research is required to fully understand the impact of organic viticulture on wine.<sup>6,7</sup>

## Production techniques and additives

Whilst organic grapes form the basis of organic wine, this is not enough to label the wine as organic. The aim of organic winemaking is to minimise external physical and chemical interventions so that the final product is not affected by multiple processing steps. Various techniques used for conventional winemaking such as the elimination of sulphur dioxide by physical processes, nano or ultra-filtration, and heat treatments above 70°C, among others, are not permitted in the organic vinification process.

The regulation provides a list of permitted additives that can be added to the wine to extend its shelf life

and maintain the aroma and taste. All additives of natural origin which are used in conventional vinification are allowed.

## Challenges

Nearly 90% of the organic grapes produced come from Europe; and Spain, France and Italy are the largest producers of organic wine, globally.<sup>8</sup> In the recent years, organic grape and wine production have expanded to other countries like China and Turkey as well.<sup>9</sup>

However, in spite of the increasing area under organic cultivation, several factors play a role in slowing down the progress of organic viticulture. These include unreliable yields, issues with pest management, and the need to educate consumers about organic products.<sup>10</sup> Consumers are often unwilling to pay higher cost attached to these wines and remain skeptical regarding quality.<sup>11,12,13</sup> Organic wine production, therefore, is a challenging process because growers and winemakers are expected to produce high quality wines while restricting their farming and wine production techniques to those permitted by the organic legislation.