

## DiSSPA STAL - Food Science

### Wine

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After harvesting, grapes are taken into a winery and prepared for primary fermentation: they are crushed and the stems are removed. At this stage, red wine making and white wine making diverge. Red wine is made from the must (pulp) of red or black grapes fermented together with the grape skins. White wine, on the other hand, is made by fermenting grape juice without the skins. White wine is occasionally made from red grapes; this involves extracting the juice so that there is minimal contact with the grape skins. Rosé wines are made from red grapes, left in contact with their skins for long enough to take on a pinkish colour, usually no more than 24 hours. For example, *Five Roses* is made using mainly Negroamaro grapes.

Primary fermentation is started by adding yeast to the must for red wine or to the grape juice for white wine. During this stage, which often takes from one to two weeks, the yeast converts most of the sugars in the grape juice into ethyl alcohol (ethanol) and carbon dioxide (CO<sub>2</sub>). The carbon dioxide is lost to the atmosphere. After the primary fermentation of red grapes, the free-run wine goes into tanks and the skins are pressed to extract the remaining juice and wine. This press wine is blended with the free-run wine at the winemaker's discretion. The wine is kept warm and the remaining sugars are converted into alcohol and carbon dioxide.

The next process in the making of red wine is secondary fermentation, a bacterial fermentation which converts malic acid to lactic acid. This process decreases the acid in the wine and softens the taste of the wine. Red wine is sometimes transferred to oak barrels to mature for a period of weeks or months; this imparts oak aromas to the wine. Before the wine is finally bottled, it can be clarified or settled and filtered.

Sparkling wines begin life as still, tart wines. They undergo a second fermentation which creates bubbles (of carbon dioxide), texture and additional flavour. There are two main methods for making sparkling wines: the Champagne method (*Metodo classico*) and the Charmat method. The former is the most traditional method and involves secondary fermentation in the bottles at around 15°C. The latter method is now used to make most sparkling wines, and fermentation takes place in large pressure-resistant stainless steel vats. A sparkling wine can also be produced by injecting carbon dioxide into wine. This method produces large bubbles that quickly dissipate and is generally only used in the cheapest sparkling wines.

**Exercise A:** Which underlined words and expressions in the text have the following meanings?

- |                          |                                       |
|--------------------------|---------------------------------------|
| 1. the last              | 6. acidic                             |
| 2. reduces               | 7. assume                             |
| 3. broken under pressure | 8. a natural fermentation agent       |
| 4. gives                 | 9. crushed red grapes and their skins |
| 5. in contrast           | 10. about, approximately              |

## Exercise B: TRUE or FALSE?

1. Red wines are made from grapes and their skins.
2. White wines can be made from red or black grapes.
3. Rosé wines are ready to drink after 24 hours' fermentation.
4. Primary fermentation is caused by yeast.
5. Sugar converts the yeast into alcohol and CO<sub>2</sub>.
6. Carbon dioxide stays in the wine.
7. Winemakers decide how to mix press wine and free-run wine.
8. Secondary fermentation makes the wine more acidic.
9. Red wine can take flavour from wooden containers.
10. Most sparkling wines are fermented in bottles at 15°C.

## Exercise C: Read the text.

If Italy is the largest producer of wine in the world, it is largely thanks to Puglia, which produces more than any other Italian region, about 17% of the total!

Viticulture is deeply rooted in local traditions but until about 20 years ago a large proportion of Puglia's grapes were used to add "substance" to wines produced in the rest of Italy and France. Thankfully this is no longer the case and Puglia now boasts 25 different DOC areas and some excellent vintages of its own.

The most widely grown grape variety is *Negroamaro*. Almost exclusively cultivated in Puglia, *Negroamaro* is used to produce some of the region's best wines, including *Salice Salentino*. However, the region's most famous grape is *Primitivo*, whose wines, including the *Primitivo di Manduria*, are generally high in alcohol content and full in body. Curiously, the *Primitivo* grape shares its genetic make-up with California's *Zinfandel* varietal.

White wines in Puglia count for less than 20% of the overall production but are gradually growing in importance. Local grapes such as *Bombino Bianco*, *Bianco d'Alessano* and *Verdeca* rub shoulders with international varieties including *Chardonnay* and *Sauvignon* to produce some excellent results.

## Exercise D: Match the beginnings and ends of the sentences:

- |   |  |
|---|--|
| 1. No Italian region produces             | are genetically identical.               |
| 2. In the past, Puglian wines             | is now recognised                        |
| 3. The quality of Puglia's wines          | of grape are grown in Puglia.            |
| 4. <i>Negroamaro</i> and <i>Primitivo</i> | made in Puglia is red.                   |
| 5. More than 80% of wine                  | are becoming more important.             |
| 6. <i>Primitivo</i> and <i>Zinfandel</i>  | were blended with more important wines.  |
| 7. Puglia's white wines                   | are Puglia's most important wine grapes. |
| 8. Local and international varieties      | more wine than Puglia.                   |

## DiSSPA STAL - Food Science **Answers**

**Exercise A:** 1 the latter 2 decreases (to decrease) 3 crushed (to crush)

4 imparts (to impart) 5 on the other hand 6 tart (adjective)

7 take on (to take on) 8 yeast 9 must 10 around

### **Exercise B:** TRUE or FALSE?

1. T.
2. T.
3. F They stay in contact with grapeskins for 24 hours
4. T.
5. F Yeast converts sugars into ethanol and CO<sub>2</sub>
6. F CO<sub>2</sub> is lost to the atmosphere
7. T
8. F It makes the taste softer
9. F It takes aromas
10. F They are fermented in vats

### **Exercise D:** Match the beginnings and ends of the sentences:

- |                                      |  |
|--------------------------------------|--|
| 1. No Italian region produces        | more wine than Puglia.                   |
| 2. In the past, Puglian wines        | were blended with more important wines.  |
| 3. The quality of Puglia's wines     | is now recognized.                       |
| 4. Negroamaro and Primitivo          | are Puglia's most important wine grapes. |
| 5. More than 80% of wine             | made in Puglia is red.                   |
| 6. Primitivo and Zinfandel           | are genetically identical.               |
| 7. Puglia's white wines              | are becoming more important.             |
| 8. Local and international varieties | of grape are grown in Puglia.            |