



WORDS CLIVE HARTLEY

EARTHLY MATTERS

TERROIR and its impact on the final quality of a wine is always a controversial but interesting topic. How much is wine's uniqueness down to the environment the grapes are grown in, or is it all in the hands of its creator? The old world swears by it; the new world analyses it to the nth degree and sits divided. Terroir has many interpretations but could be said to include all aspects of the vineyard environment. Simplified it can be boiled down to topography, climate and soil.

Topography describes the surface of the land, its altitude and distance from bodies of water or cities that all have an impact on the climate. Hills give us slopes and slopes give us aspect. In other words what direction a vineyard is facing, and the steepness of the slope. An easterly aspect facing the rising sun is considered the most desirable. "If you are in the southern hemisphere you need a north facing tilt, while in the southern hemisphere a southerly one is considered ideal topography. These aspects get the morning sun and warm up the soil quickly. An easterly aspect shelters the vine from bad weather which often comes from the west. Hills are the preferred topography for vineyards as the slopes provide important air flow which is important in marginal, cool climate regions. At night dangerous cold air flows down hillsides into the valley and gets trapped by a band of warmer air on top causing frost. The slope often escapes damage from frost. The topography of a region may be also dominated by the proximity to rivers, lakes and oceans. These have a moderating effect on the climate and reduce the likelihood of frost.

Climate is divided into three types. Macro-climate or regional climate, influenced by its general latitude, and is what we look to first in generally describing a region. Mesoclimate is the site climate which takes into consideration the topographical features discussed in the last paragraph. Finally, micro-climate considers the canopy area influenced by the row spacing, trellising and direction of the vines. You could say that climate is king, but soils are an equally

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important determining factor on whether a vineyard is firstly planted.

In explaining the composition of vineyard soil we talk about bed rock, which may or may not protrude from the earth. On top of this we have various levels of debris and humus called sediment which makes up the subsoil or topsoil.

The topsoil, where the roots are most active, could consist of weathered fragments of the bed rock or they may have fallen from higher up a slope via gravity (called colluvial) or been washed into its current location by a stream or river (alluvial). As well as these two sources of sediment vineyards can also be covered with wind-blown material, described as

loess, and debris deposited by retreating glaciers known as moraines.

For vines to grow the soil must have some degree of fertility, but not too much. Soil is generally made up of clay, silt, sand, stones, rock and organic material. Silt, simply put, sits between the small clay particles and the larger sand particles.

In general soils need to be well drained, but also friable to allow a moderate supply of water to be kept for vine use. However, we don't want the vine to be water-logged, a certain level of water stress produces the right amount of grapes if we are balancing quantity and quality. Where rainfall is plentiful then the soils need better drainage and soils with plenty of stones are ideal. Vineyards that contain a majority of stones, gravel or rocks have the potential to make some of the world's best wines, the Bordeaux Medoc region is a case in point. Stony soils limit surface evaporation as well as conduct heat and are usually only moderately fertile. Retaining heat in the soil can keep the vine warm in the evening or on cloudy days.

Texture is also important in determining the water holding capacity, as well as the degree of aeration. Although they are the finest particles, clay is regarded as a heavy textured soil which retains more water than others. Clay takes longer to warm up in spring and tends to be generally cooler than sandy soils. Sandy soils have the opposite attributes to clay, being loose and free draining; too free draining in fact, and are regarded as poor soils due to their lack of water retention and low nutrients.

The soil must also have a small proportion of organic material, normally around 2 to 5 per cent. This is the remains of plants

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and animals, and animal excreta broken down in the soil by organisms such as worms, beetles, mites and bacteria. When these break down they enrich the soil with nitrogen, sugars and starch. Soils do not need to be too high in organic material but have enough to support a good worm population which assists in making the soil friable. This is a key role for organic material as it is a way of avoiding waterlogged soils and hard compacted soils when it is dry. Very sandy soils need more organic material as it decomposes quicker than in clay-rich soils. The way to maintain healthy level of organic material is to grown cover crops in winter and slash them during the growing season.

Soils contain valuable life-giving elements. These are divided up between major and minor, according to what is important to the vine. The major elements in soil for vines include nitrogen, phosphorus, potassium, calcium, sulphur and magnesium. Minor elements include boron, copper, iron and a plethora of others.

You cannot win with nitrogen. An excessive pick-up of nitrogen by the vine will result in a green leafy canopy and unripe fruit, whereas low levels can cause problems at fermentation time, leading to stuck fermentations. Potassium deficiencies are common in cool, humid climates and this can lead to fruit with less flavour and the vines are more prone to feeling the effects of droughts. Generally a deficiency in any of the soil nutrients will result in fewer crops, so a vineyard will need to balance its soil by enriching with fertilisers and that is from the hand of the creator. 



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vineyard



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