

- What is wine? A simple question, or is it?
- Overview of major soil types – what’s the difference between soil and rocks?
- How does soil composition affect agriculture and the concept of terroir?
- Farming and soil health
- Specific wines and their soils

What is Wine

- Wine is, at its essence, an agricultural product
- A year in the life of a vineyard site, bottled
- Everything will effect the final outcome of the wine – but soil is certainly an element
- Scientific links between soil types and flavor profiles are difficult to prove; no conclusive evidence

Major Soil Types

Soils have three major categories:

- Igneous, Sedimentary, Metamorphic

Igneous

- Igneous: Means “of fire” – generated by volcanic activity.
- Extrusive vs. Intrusive types
- Common examples: Granite (intrusive, high in silica), Basalt (extrusive, high in iron and magnesium)
- A relatively unusual soil type

Sedimentary

- Most common soil type; formed by the movement of water
- 4 major types:
 - Clastic (Gravel, sand, mud, silt as a general classification) – many sub-classifications: sandstone (hardened sand), for example
 - Biogenic Sedimentary – Limestone, coal and chert
 - Chemical Sedimentary – Oolitic limestone
 - The rare “Other” – pyroclastic flows (water and volcanic ash), impact breccia (underwater asteroid craters)

Metamorphic Rocks

- Formed when sedimentary or igneous rocks come into contact with heat and pressure beneath the earth
- Classification and colors comes from minerals in the “proolith” or the original stone/base material.



- 5 major types:
 - Slate – volcanic ash or clay, which becomes shale via compression, fine-grained
 - Schist – igneous rock and mineral clays, medium-grained
 - Gneiss – igneous or sedimentary rocks, coarse-grained
 - Granoblast (marble, quartzite) – formed mostly from sedimentary rocks, including fossils, coarse-grained
 - Hornfell – formed from sedimentary sandstone, it can be intermingled with igneous rock.

General notes on soils through the world

- New World: Younger soils, more uniform
- Old World: Older soils, less uniform
- Nitrogen availability and mineral balance is key to healthy soils
- Most wines are grown on sedimentary soils, since they are well-suited to agriculture, but not all

Soil Type: Albariza

Chalk, sedimentary

Wine: El Maestro Sierra Fino – Jerez, Spain

Soil Type: Blue Slate

Blue slate, metamorphic

Wine: Van Volxem Saar Riesling '10 – Saar, Germany

Soil Type: Gravel Limestone

Gravel-limestone, sedimentary

Wine: Bechtold Silberberg Pinot Gris '08 – Alsace, France

Soil Type: Llicorella

Llicorella slate, metamorphic

Wine: Alvaro Palacios Camins del Priorat '09 – Priorat, Spain

Soil Type: Granite

Granite, igneous

Wine: David Reynaud Cuvée Georges Reynaud '10 – Crozes-Hermitage, France

Soil Type: Loess

Loess over volcanic basalt, sedimentary/igneous

Wine: Waters Loess Syrah '09 – Walla Walla, Washington

