

## FACTSHEET: SOIL TESTING FROM VINEYARDS

### Why Analyse Vineyard Soil?

Soil analysis provides a guide to the amount of nutrients available in the soil in the vineyard. It also gives information on acidity and salinity which will affect the response of the vines to nutrients. The results of the analysis can also reveal deficits in micronutrients. Soil may be sampled as an annual routine to establish lime or fertiliser requirements or to investigate plant deficiencies or problems.

### Factors affecting vine growth

- Salinity

Vineyard soils are generally accepted as saline if the electrical conductivity (EC) is greater than 0.40 dS/m. Productivity can be reduced by up to 50% if the EC is above 0.80 dS/m.

- Acidic soils

The growth of vine roots is reduced in soils that have a pH less than 5.0. Some rootstocks are more tolerant of lower pH than others.

- Alkaline soils

For vineyard soils above pH 8.5 certain rootstocks may need to be used. Certain wine regions such as Champagne are well known for having calcareous soils. The high level of calcium-based components in these soils give rise to alkaline conditions. Common calcareous soils include chalk and limestone bases.

- Nutrients

The nutrients of most importance are Nitrogen, Phosphorus and Potassium (N, P & K). Vines can produce too much vigour if the N content of the soil is too high. Trace elements such as manganese (Mn), copper (Cu), iron (Fe), zinc (Zn), calcium (Ca), magnesium (Mg) and sodium (Na) are also important.

## **Sample Collection**

Soil sampling needs to be done carefully to be sure that reliable results are produced. Where micronutrient levels are required, sampling equipment must be used that will not cause contamination. Plastic sampling bags are provided by Vintessential for this purpose. Clean plastic collection tools are better than metallic ones as there can be contamination from metallic implements.

Trace nutrients can vary widely in vineyards and so it is best to take a number of sub-samples, mix them and send a sample of this mixture for testing. If the soil composition changes from sandy to clay for example, send different samples from each soil type. Certain areas of a vineyard should be excluded from the sampling points – these include burn areas, eroded gullies and areas where fertilizer or compost has been dumped previously.

## **Sending samples**

Soil samples should be kept cool after sampling in the vineyard and before reaching the laboratory. This will reduce biological and chemical reactions that can occur that may affect the fertility data obtained.

## **Soil Testing Bundle**

The Vintessential Soil Testing bundle includes: Total nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Zinc, Iron, Copper, Manganese, Sodium, Electrical conductivity and pH. A wide range of other tests can also be performed on request. Please call your local independent Vintessential laboratory to discuss your soil testing needs as these may vary between soil types and regions.

Petiole analysis later in the season can be used to check the levels of nutrients that are present in the vine itself.