



The Fertilizer Association of Ireland

Efficient Use of Fertilisers Video Series – Soil Analysis Process

The third video in the Fertiliser Association of Ireland video series on the *Efficient Use of Fertilisers* outlines the key steps in the soil analysis process in the laboratory. This video follows the two previous videos on Soil Sampling and Fertiliser Planning.

Dr. David Wall said “in the region of 175,000 soil samples are taken across the country annually and the winter period (November to February) is an opportune time to take soil samples across the farm to get a true reflection of the plant available nutrients in each field”.

Brendan Healy, Soil laboratory manager, Johnstown Castle outlined the key steps in the soil analysis process from start to finish to ensure that each sample is carefully prepared and analysed and that quality control is maintained to ensure accurate soil test results at the end.

Steps in soil analysis laboratory process

1. The first step is that samples are clearly labelled so that they can be tracked in the laboratory for the different soil tests and to maintain quality control.
2. Soil sample are dried and sieved which reduces soil sample size by 50%, so it's important to send sufficient soil for analysis.
3. The first soil test to be carried out is to measure the soil pH.
4. The second test is to measure the soils lime requirements and determine the level of lime required to bring the soil pH up to the target soil pH.
5. The final test is to measure the plant available soil P & K using the Morgan's test.
6. Soil test results are reported in a soil analysis report showing the soil pH (level of acidity) & Lime requirements (tonnes of lime per hectare) needed. The soil test report also shows the levels of phosphorus (P), potassium (K) and any other nutrients tested. The soil P & K results are also reported by soil index, which indicates if the levels of these soil nutrients are (1) very low, (2) low, (3) optimum or (4) high. As P and K index = 3 is the target on many farms, the soil test results indicate which fields require additional fertiliser or organic manure applications to build-up soil fertility.

Soil Analysis Process Video <https://youtu.be/xjLQ39c2Gak>

Brendan said “the soil analysis process relies on correctly taken soil samples that represent the field area sampled. When fully filled soil samples are sent to the soil laboratory they provide sufficient quantities of sample to carry out all the soil tests required and to generate the most reliable soil test results for each field”.

This video series aims to provide information for farmers, advisors and the agri-industry on how soil sampling, analysis, and fertiliser planning can be leveraged to increase the efficient use of fertilisers on farms and maximise the return on investment. Mark Plunkett president of the Fertiliser Association of Ireland said that “reliable soil test results are the foundation to planning the application of lime and provides the basis for making informed nutrient (slurry, P & K) application decisions at key times during the growing season”.