

INTERPRETATION OF SOIL ANALYSIS RESULTS

pH and Lime

Lime Requirement

This is shown as tonnes per hectare - to convert to tons per acre, divide lime requirement by 2.5. The target pH and lime requirement is dependent on the soil type.

Target pH

Soil Type	Arable	Grassland
Mineral Soils	6.4	6.0
Organic Soils	6.2	5.7
Humose Soils	6.0	5.5
Peaty Soils	5.8	5.3
Peat	5.5	5.0

Arable	pH Range (on mineral soils)	Comments
	Below 5.0	Possibility of failure of all crops
	5.0 - 5.4	Possibility of failure of many arable crops e.g. barley, oilseed rape
	5.5 - 5.9	Acidity symptoms may appear in some arable crops
	6.0 - 6.5	Suitable for most arable crops
	Above 6.5	Possibility of trace element problems

Grassland

The pH for grassland on mineral soils should be between 5.7 and 6.2 depending on the type of sward and on the arable crops in the rotation. For intensive grassland pH of 6.0 is desirable for optimum grassland production. For permanent grassland the target pH is 5.8.

Phosphorus (P)

Potassium (K)

Magnesium (Mg)

The soil status for these nutrients is classified into 5 categories. The aim is to maintain soils in moderate status. If below this, apply extra to build up reserves; if more then let soil reserves run down. If moderate then just need to replace that taken away by crop.

V.L. (Very Low) - For phosphate and potassium this is the level at which crops may fail or produce less than 50% of their normal yield. They will also show clear symptoms of deficiency, unless extra phosphate and potassium is applied.

Magnesium deficiency in crops is often just transient and the plants rarely suffer a loss of yield. The main problem is in grazing stock who can not get enough magnesium for their needs from V.L. soils.

L (Low) - For soils at this P and K level, it is advisable to increase the P and K required rates above that recommended for Moderate (M) soils.

For magnesium it is the level at which crops may occasionally show deficiency symptoms and product yields below optimum. Magnesium concentrations in crops and herbage may not be adequate for animal requirements.

M (Moderate) - Soils with these P and K levels require the normal recommended rates of fertiliser for optimum yields of all crops.

Magnesium levels are adequate for crop growth but magnesium concentration in crops and herbage may be inadequate for animal requirements.

H (High) - Soil with these P and K levels can receive lower rates than those recommended for soils of Moderate status and still produce optimum yields of all crops.

Magnesium levels adequate for crop growth. Magnesium concentrations in crops and herbage will be at a maximum.

E.H. (Excessively High) - Soils at these levels of P, K or Magnesium are likely to produce nutrient imbalances and/or reduced yields. No more of the nutrient should be applied until the level is reduced to the moderate status.

PHOSPHATE, POTASSIUM and MAGNESIUM Levels and Soil Status

SAC	SAC Status	Extractable Phosphorus	Extractable Potassium	Extractable Magnesium
Scales of Interpretation, results in mg/l	VL	0 - 1.7	0 - 39	0 - 19
	L	1.8 - 4.4	40 - 75	20 - 60
	M-	4.5 - 9.4	76 - 140	61 - 200
	M+	9.50 - 13.4	141 - 200	61 - 200
	H	13.5 - 30.0	201 - 400	201 - 1000
	VH	> 30.0	> 400	> 1000