

For training on interpretation of soil analysis and nutrient management planning

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# Understanding your soil analysis laboratory report

**Step 1** - Look at the example laboratory report below. The key elements are highlighted and explained. Compare with your own report.

**Step 2** - The index tables overleaf provide guidance on the use of slurry / manure and fertiliser.

## Step 1 - Example Soil Analysis Laboratory Report

Mr AN Other  
Somewhere

Report generated on: 07 March 2008  
Date received: 29 February 2008

Lab. sample no/ Yout references	pH	Texture	Lime requirement		Phosphorus	Potassium	Magnesium
			Arable t/ha (t/acre)	Grass t/ha (t/acre)	mg/l (index)	mg/l (index)	mg/l (index)
400-2008-8253 Soil 1-19-60 Field 4	6.1	SZL (Sandy Silt Loam)	4.00 (2.00)	0.00 (0.00)	20.0 (2)	216 (2+)	102 (3)
Farm Survey & Field Number	pH	Texture	Lime requirement for Arable & Grass		Available amounts of nutrients (Index)		

**Farm survey & field number** - indicates the location of the sample as you described on your soil sample bag. It is important to clearly label samples.

**pH** - is a measure of soil acidity. The target pH is between 6.0 and 6.5.

**Soil texture** - is the proportion of sand, silt and clay in the soil

**Lime requirement** - is determined by the pH. It is given in tonnes per hectare and in brackets tons per acre for both grassland and arable crops. The lime requirement recommendation is for year one only

**Available nutrients** - The last three columns list the available amount of phosphorus (P), potassium (K), and magnesium (Mg). These are expressed in two ways:

- Concentration - milligrams per litre, mg/l
- Index ( \_ ). An index can range from 0-9, but most soils range from 0-5.

## Step 2 - Using the Soil Index tables

As each soil index relates to available nutrients in a sample, it can be used to determine the need for additional nutrients required for crop growth. The higher the soil index the lower the need for additional nutrients from slurry / manure and fertilisers.

1. Identify the relevant nutrient soil index on your soil analysis laboratory report.
2. Locate the equivalent index in the relevant nutrient table.
3. Read across for advice. For more detailed information on crop nutrient recommendations refer to the Guidance Booklet for NI Farmers on the Requirements of the Nitrates Action Programme.

### Magnesium, Mg Index - what does it mean?

Grass growth is unlikely to respond to magnesium fertiliser. It is important to take measures such as providing magnesium in water, food supplements or by dosing to prevent grass tetany irrespective of soil Mg status. Where lime is also required, the use of magnesium limestone may be cost effective.

### Nitrogen

Nitrogen is not included in the soil analysis and so recommendations are estimated after considering soil type and past management, e.g. previous cropping, slurry/manure and fertiliser use. For more detailed information on nitrogen recommendations refer to the Guidance Booklet for NI Farmers on the Requirements of the Nitrates Action Programme.

### Phosphorus, P Index - What does it mean ?

Index	Description	Phosphorus (P) Advice
0	<b>Deficient</b>	Low levels of soil P are likely to limit production. Increase P with slurry/manure and/or P fertiliser applications.
1	<b>Optimum for extensive grassland</b>	<b>Extensive grazing:</b> Optimum for extensive grazing. If current level of production is satisfactory, continue with your usual slurry/manure and fertiliser policy.
		<b>Intensive grazing, silage &amp; arable crops:</b> Low P levels are likely to limit production. Increase P with slurry/manure and/or fertiliser applications.
2	<b>Optimum for intensive grassland, silage &amp; arable crops</b>	<b>Extensive grazing:</b> High levels of soil P present. No yield response to added P. Consider redistributing slurry/manure to lower P index fields. Use a zero P fertiliser.
		<b>Intensive grazing, silage &amp; arable crops:</b> Optimum for intensive grazing and silage fields. If current level of production is satisfactory, continue with your usual slurry/manure and fertiliser policy.
3	<b>High</b>	High levels of soil P present. <b>Grassland:</b> No yield response to added P. Consider limiting slurry/manure applications to 1st cut silage fields and redistributing slurry/manure to lower P index fields. Use a zero P fertiliser. <b>Arable crops:</b> apply P to crop needs only.
4 & above	<b>Excessive</b>	Excessive levels of soil P present. <b>Grassland:</b> No yield response to added P. Consider redistributing slurry/manure to lower P Index fields. Use a zero P fertiliser. <b>Arable crops:</b> apply P to crop needs only.

### Potassium (potash), K Index - What does it mean ?

Index	Description	Potassium (K) Advice
0	<b>Deficient</b>	Production likely to be limited, especially silage crops. Increase K by using slurry/manure where possible and/or muriate of potash or a high K fertiliser. Do not apply large dressings of K in early or late season due to an increased risk of grass tetany.
1	<b>Low</b>	Production likely to be limited, especially silage crops. Increase K by using slurry/manure where possible and/or muriate of potash or a high K fertiliser. Do not apply large dressings of K early or late season due to an increased risk of grass tetany.
2-	<b>Optimum</b>	Optimum for grazing, silage & arable crops. If current level of production is satisfactory, continue with your usual slurry/manure and fertiliser policy. Do not apply large dressings of K in early or late season due to an increased risk of grass tetany.
2+	<b>High</b>	If current level of production is satisfactory, continue with your usual slurry/manure and fertiliser policy. Do not apply large dressings of K in early or late season due to an increased risk of grass tetany. <b>Arable crops:</b> apply recommended rates of K.
3	<b>Very High</b>	No yield response to added K. Unless soil P levels are low, consider redistributing slurry/manure applications to lower K index fields. <b>Arable crops:</b> apply recommended rates of K.
4 & above	<b>Excessive</b>	No yield response to added K. Unless soil P levels are low, consider redistributing slurry/manure applications to lower K index fields. <b>Arable crops:</b> apply recommended rates of K.