Sample Received 14 Aug 08

Client: Mr Farmer

Sample Name: Farm Field

Sample Ref: H91 60000

Kingshay — Ground Level Nutrition

SOIL ANALYSIS

Soil Description: Clay

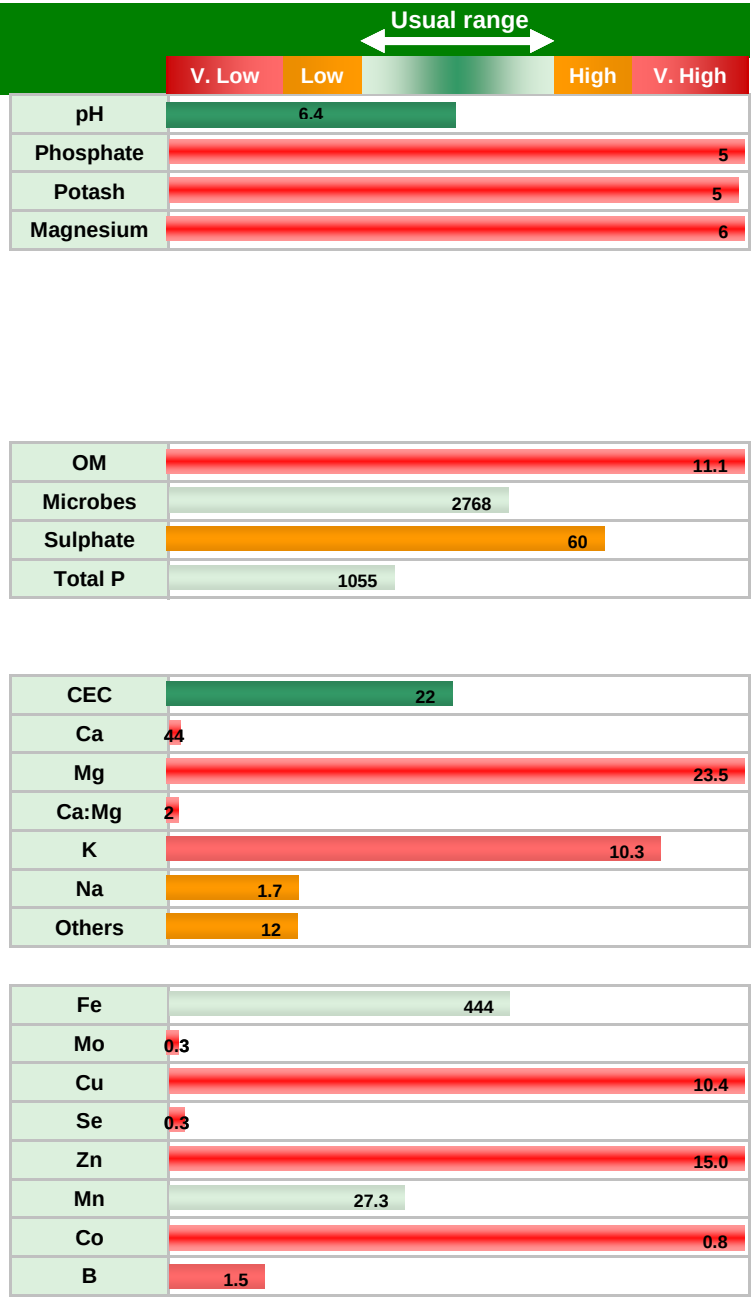
Land Topography: Flat

Drainage: Good

Cropping: Grazing → Grazing

Analysis Factor			Soil Results	Index	Notes
STANDARD SOIL ANALYSIS					
Soil pH			6.4		pH satisfactory - NB not carried by calcium but magnesium - see CEC below.
Phosphate	P_2O_5	mg/l	79	5	Phosphate excessively high - avoid additional supplementation.
Potash	K_20	mg/l	681	5	Potash excessively high - avoid additional supplementation.
Magnesium	MgO	mg/l	461	6	Magnesium excessively high - avoid additional supplementation.
PHYSICAL SOIL STRUCTURE					
Sand		%	30		Clay Loam - Has potential to become a well balanced physical soil. Supplementing deficient mineral nutrients e.g. calcium, sodium etc should enhance physical soil structure. Consider regular slit aeration spring / autumn to promote NPK and other nutrient release in established swards. Also deep flat lift aeration - autumn '08.
Silt		%	48		
Clay		%	22		
MACRO NUTRIENTS					
Organic Matter		%	11.1		High OM levels with moderate microbial function assisting nutrient cycling. Recommend slit aeration spring / autumn.
Microbial Activity			2,768		
Sulphate	SO_3	mg/l	60		Sulphate levels unusually high. Investigate historical management.
Total Phosphorus			1,055		Improved management and soil mineral balance will enhance release of both total phosphorus and potash into the available nutrient forms.
Total Potassium			2,512		
CHEMICAL					
CEC		meq/100	22.2		CEC moderate - aeration, calcium and sodium important for soil health.
Calcium	Ca	%	44.0		Despite adequate pH this soil is severely dominated by excess magnesium. Elemental calcium is extremely deficient. This will reflect poor forage dry matter production levels and possibly low calcium availability in the forage itself. Consider gypsum at 2.5 t/ha (autumn 2008) and calcium based fertiliser ingredients eg CAN.
Magnesium	Mg	%	23.5		
Ca:Mg ratio			2		
Potassium	K	%	10.3		Potash status is high and excessive relative to low sodium. This is likely to be causing metabolic problems in livestock and impacting on sward palatability and production. Consider applying Cheshire / Cleveland rock salt spring / autumn (125 kg/ha/application). Offer ad lib lump rock salt to livestock (except dry cows).
Sodium	Na	%	1.7		
Hydrogen	H	%	-		
Others		%	12.4		**Summary -** Priority to address calcium status with urgent gypsum application autumn 2008. Apply calcium lime @ 1 t/acre spring 2009. Repeat gypsum autumn 2009. Consider further application but not until at least autumn 2010. Deep flat lift aeration must also be considered. Discuss details - extreme soil problem.
TRACE ELEMENTS					
Iron	Fe	mg/l	444		
Molybdenum	Mo	mg/l	0.30		
Copper	Cu	mg/l	10.4		
Selenium	Se	mg/l	0.31		
Zinc	Zn	mg/l	15.0		

Manganese	Mn	mg/l	27.3	Unusual trace element profile, evaluate using FORAGE MINERAL ANALYSIS for livestock mineral supplementation.
Cobalt	Co	mg/l	0.8	
Boron	B	mg/l	1.50	
Conductivity		mg/l	2,235	



Analysis complies with MAFF/DEFRA ref:427209

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