

Introduction

Soil pH is one of the most important factors affecting soil fertility. Plant nutrients are most available when soil pH is maintained at a level just below neutral (pH 6.5 to 6.8). Increased crop yields, which remove more calcium and magnesium per acre, coupled with the use of acidifying nitrogen fertilizers leads to soil pH levels falling below the ideal 6.5 to 6.8 range. Ground agricultural limestone can be used to raise soil pH back to a desirable level.

Reasons to Test

The amount of lime required and the reaction time to raise soil pH to the desired level are both influenced by the quality of the liming material to be used. Lime quality is expressed as Effective Calcium Carbonate Equivalent (ECCE) and is determined by the chemical composition and the fineness (Particle Size Distribution) of the liming material.

Neutralizing Value (NV) is a measurement of a liming material's chemical capacity to raise soil pH relative to pure Calcium Carbonate, which is assigned a neutralizing value of 100. Particle Size Distribution determines how quickly the neutralizing reaction can take place. Lime that will not pass through an 8 mesh screen has almost no ability to change soil pH. Particles that will pass through an 8 mesh sieve, but are retained by a 60 mesh sieve are considered

50% effective. Particles that pass through a 60 mesh sieve are considered 100% effective to raise soil pH.

Dolomite lime is recommended for soils testing low in magnesium. Dolomitic limestone can range from 15% to 45% Magnesium Carbonate (MgCO₃). Laboratory testing is the only way to determine the MgCO₃ equivalency of a liming material so that appropriate rates are used to correct a magnesium deficiency.

Interpretation of Results

Your complete lime analysis will report percent moisture, percent Ca, percent Mg, NV, Particle Size Distribution, and ECCE. Other elements can be tested as requested.

ECCE is calculated from both the NV and Particle Size Distribution. Lime recommendations are based upon materials with an ECCE of 90. If your limestone has an ECCE other than 90, a correction factor must be used to calculate the proper application rate. The correction factor is 90 divided by the ECCE.

Example: If a soil test calls for 2 tons (4,000 lbs.) of Ag lime per acre, and the liming material being used has an ECCE of 80, you should use 2.25 tons (4,500 lbs.) per acre (2.0 tons * 90/80).

Lime Analysis Costs

L1: Particle Size Distribution: (8, 20, 60, & 100 mesh sieves)	\$ 25
L2: Moisture, Ca, & Mg	\$ 26
L3: Moisture, Ca, Mg, & Neutralizing Value	\$ 45
L4: Moisture, Ca, Mg, Neutralizing Value, Particle Size Distribution Effective Calcium Carbonate Equivalent	\$ 60

Gypsum Analysis Costs

G1: Moisture, Ca, S, & Purity	\$ 60
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Neutralizing Value (NV)	\$ 15
Moisture	\$ 9
pH	\$ 7
Boron (B)	\$ 17*
Calcium (Ca)	\$ 15*
Chlorine (Cl)	\$ 20
Copper (Cu)	\$ 15
Iron (Fe)	\$ 15
Magnesium (Mg)	\$ 15*
Manganese (Mn)	\$ 15*
Nitrogen-Nitrate (NO ₃)	\$ 15
Nitrogen-Ammoniac (NH ₄)	\$ 15
Nitrogen-Total (N)	\$ 15
Phosphorus (P)	\$ 15
Potassium (K)	\$ 15
Sodium (Na)	\$ 18
Sulfur (S)	\$ 20*
Zinc (Zn)	\$ 15*

* Cost is \$35.00 if element concentration exceeds 5.0%

Lime / Gypsum Analysis Request Form

Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

Fax: _____

Sample Number: _____

Tests Requested: L1

L2

L3

L4

G1

Other Tests: _____

**Advantages of Using
Litchfield Analytical Services**

We utilize the most modern laboratory methods available. Our staff is trained and experienced in analyzing agricultural liming materials, which ensures you accurate and consistent results. Sample analysis will be completed within 4 business days of receipt of the sample. Results can be reported by phone or fax upon customer request.

Compare our turn-around time, the quality of the tests that you receive, and our very competitive rates. We are sure that you will want to place your lime and gypsum testing needs in our experienced hands. Our goal is to provide you with quality laboratory services at competitive rates.

Lime/Gypsum Analysis



Litchfield Analytical Services

Mycotoxin Testing
Feed Analysis
Soil Analysis
Tissue Analysis
Manure Analysis
Fertilizer & Lime Analysis

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