

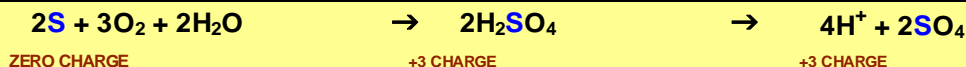
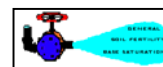
CCS Pipeline™

For information on soil and fertility considerations, call Creech Crop Services, LLC.

Buford Creech at: 941-737-2719 creechcrop@aol.com

7-15-02

GENERAL SOIL FERTILITY INFORMATION REACTION OF SULFUR IN THE SOIL SOLUTION

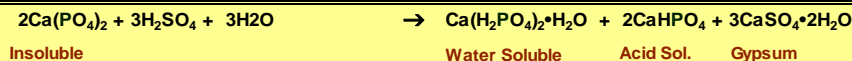


Most sulfur oxidation in the soil is biochemical in nature. Biochemical sulfur oxidation is accomplished by a number of autotrophic bacteria, including five species in the genus *Thiobacillus*.

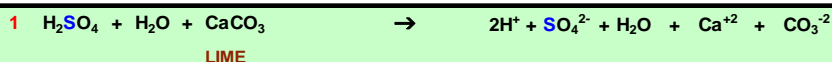
For every sulfur atom oxidized, two hydrogen ions are formed. By adding sulfur this acidifying reaction is utilized to reduce the pH of soils.

Useful Reactions with Sulfur (Sulfuric Acid)

Increase Availability of Phosphorus



Reduce pH in Soil with Elemental Sulfur



Hi-Cal limestone is 31.5% Calcium, Dolomitic Limestone is 21.5% Calcium and pHast-Cal_{tm} is 20% Calcium (pHast-Cal_{tm} is a very fine and quickly available source of Calcium produced by Douglass Fertilizer and Chemical, Inc.).

When balancing base saturation of calcium, even if pH is above 6.9 ... follow the guidelines in the tables below. The table has information on addition of sulfur to counter high pH....see equations above.

* (substitute gypsum (21.5% Ca. & 17 % S) For Hi-Cal in below table if pH >6.9)

SULFUR & HI-CAL APPLIED RATES		
Soil pH	Hi-Cal	Sulfur
< 6.2	2000	None
6.3 - 6.6	1000	None
6.7 - 7.0	500	None
7.1 - 7.4	100 gyp.	50 - 80
7.5 - 7.7	80 gyp.	80 - 150
7.8 - 8.0	none	150 - 250
> 8.0	None	300 (Max)
Crop needed soil SULFUR lb/ac in top 6" soil based on information on CEC & soil type.		
Min. S level	48	lb/ac.

BASE SATURATION TARGET PERCENTAGES				
TARGET BASE Ca	TARGET BASE Mg	TARGET BASE K	IF MUCK ENTER 1	ENTER CEC HERE
70.0%	12.0%	3.5%		5.4
Minor Element Target LBS/Ac. In top 6" Soil at above CEC Factor				
Mn	Zn	Cu	Fe	B
31	7	1.0	26	1.0
Minimum Phosphorus LB/AC In top 6" Soil at CEC Above				
120	274.8	lb P ₂ O ₅ /ac or	6.31	lb P ₂ O ₅ /1000 ft ²
Organic amendment lb/ac/year to improve soil tilth based on CEC above				
Apply* Org. at	14	Lb./1000/Yr. Or	600	Lb./Ac./Yr.C