

Growth Enhancer Turf Consultants

SOME FACTS ON CALCIUM

Plant calcium availability from the soil is directly related to material particle size, its ability to tie up in the soil, and microbial assimilation.

| Particle Size | Solubility after 1 yr | Solubility after 4 yr |
|---------------------|-----------------------|-----------------------|
| Greater than 8 mesh | 5% | 15% |
| 8 to 30 mesh | 20% | 45% |
| 30-60 mesh | 50% | 100% |
| Passing 60 mesh | 100% | 100% |

(mesh size is the number of squares divided within one sq. inch)

BULK CALCIUM APPLICATIONS DO NOT PROVIDE ANY SIGNIFICANT CALCIUM AVAILABILITY TO THE PLANT!

GYPSUM - is very soluble and will move sodium through the soil (excellent for **FLUSHING**). Gypsum will not tie up in the soil, but leaches rapidly. However, you get very little plant available calcium from gypsum. Gypsum has a large particle size in which the majority passes through a 20 mesh screen. Gypsum has 1.5 lbs of available calcium per ton of material. Microbes do not like $(CaSO_4)$ because of the Sulfur and too much sulfur in soils is a hindrance. Cost per ton \$300

DOLomite - has more availability than gypsum, but ties up rapidly with bicarbonates. Dolomite is not good for flushing soils, and will raise the pH. Dolomite also has a large particle size in which the majority of the particle passes through a 20 mesh screen. Dolomite has 2.9 lbs of available calcium per ton of material. Cost per ton \$200

LIME - is virtually unavailable immediately (farmers lime in fall for spring planting) in a pH above neutral, but is used successfully to fill up depleted soil reserves and soil structure.

All Calcium Carbonates must have either organic acids from root exudates and/or microbial breakdown for plant availability ($CaCO_3 + \text{microbes} = CO_2 + Ca^{++}$). Without this action there would be no CO_2 for **Photosynthesis! Microbes prefer $CaCO_3$ over other forms.**

TRICAL 35% SP- IS A (PCC) "PRECIPITATED CALCIUM CARBONATE". Trical is complexed with an organic acid and will not tie up with bicarbonates. Trical has 5.2 lbs of available calcium per pail (15 lbs) of material. Trical will not affect soil pH. 99.9% of the particles are 1-2microns in size, essentially all particles are available for immediate conversion by microbes.

CALPHLEX- IS A PATENTED PRODUCT WITH MULTIPLE CHELATES OF A GLUTARIC ACID THAT HAS EXTREME REACTIVITY IN THE SOILS TO SOLUBILIZE TIED UP CALCIUM. ONE GALLON CAN "MINE" UP TO 89.1 LB OF CALCIUM IN SOIL RESERVES!