



Function of T.O.G./Calcium in the Soil

- Reduces Hydrogen, Sodium, & Chloride in the plant & soil
- Breaks down insoluble calcium compounds already in the soil
- Improves germination, stimulates root growth, and enhances microbial activity
- Increases Essential Nutrient Absorption and Translocation
- Improves soil structure (floculation, water infiltration)
- Supplies optimal calcium levels to plant cells to strengthen the plants resistance to disease.
- Balances the CA/N ratio in the plant

Proprietary -
CSI Chemical
Corporation

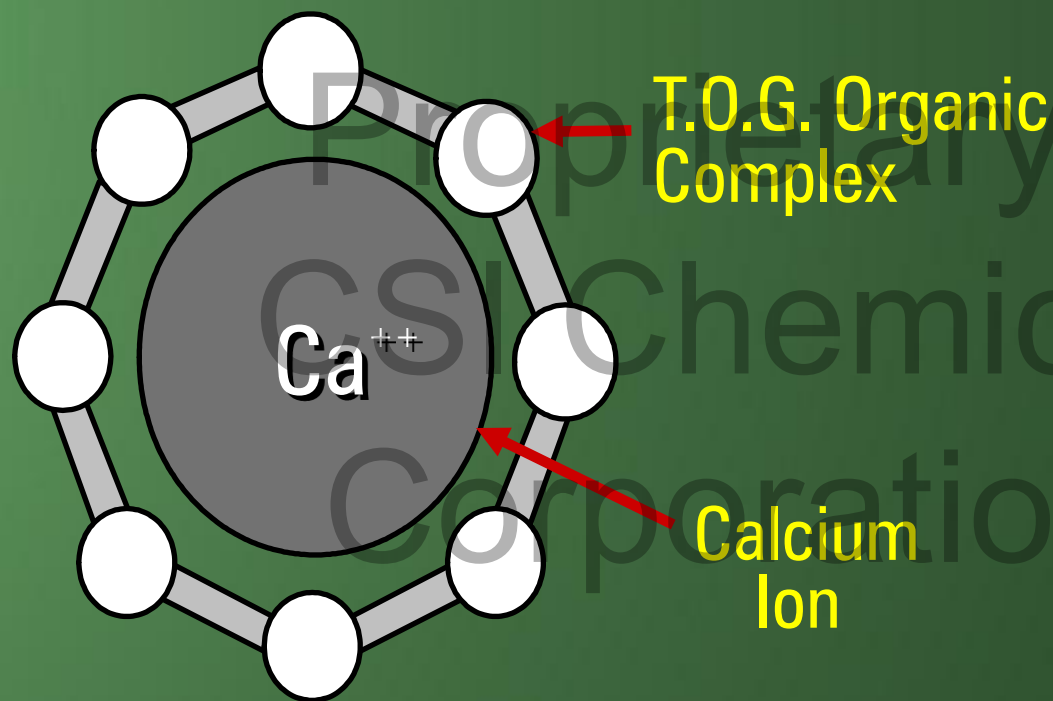
Soil pH of surface inch - 5th year

Nitrogen source - 180 lb/A/yr

Control	Urea	UAN	NH_4NO_3	$(\text{NH}_4)_2\text{O}_4$
6.7	5.9	5.8	5.5	4.7

Murrill Silt Loam - PA

T.O.G./Calcium Complex



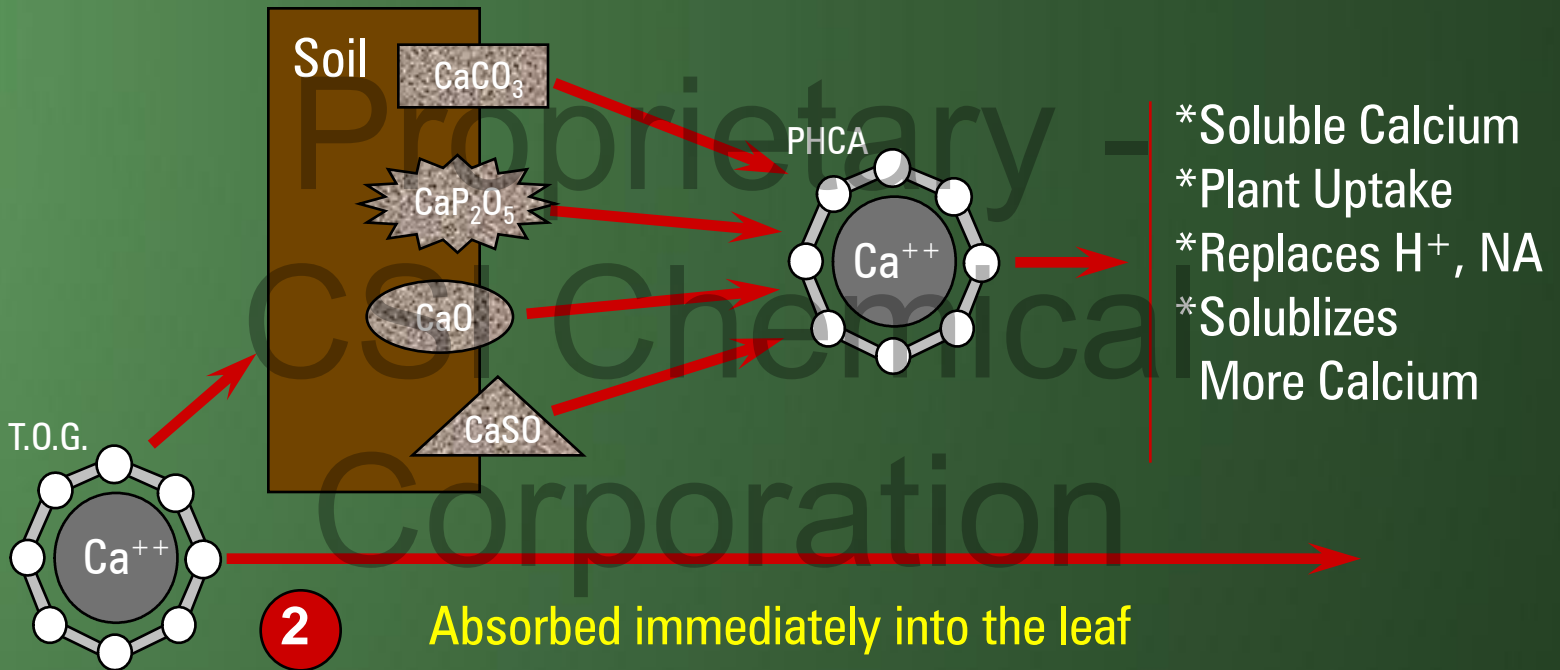
T.O.G. Organic
Complex

Calcium
Ion

The T.O.G. Complex masks the calcium ion from the plant allowing the calcium to be absorbed immediately and move throughout the plant to the glue that cements the cells together making the leaf blade thicker, stronger and healthier to resist disease. T.O.G. also promotes root growth for better uptake of available nutrients.

T.O.G Technology - 2 modes of action

1 Breaks down insoluble calcium compounds



Greenhouse Study

Soil Analysis - lbs/acre

Treatment	Soil	Buffer	K	P ₂ O ₅	Mg	Ca	Total	% Saturation				
	pH	pH				Exch	Ca Soil	H	K	Mg	Ca	CEC
Control	5.6	6.8	550	356	740	4960	136000	7.2	3.9	17.2	69.2	17.9
Nutri-Cal 4 Gal.	5.7	6.9	720	328	900	5920	131200	4.7	4.4	17.9	70.8	20.9
2000# Lime 100% ECCE	5.7	6.9	470	304	900	5440	148800	5.1	3.0	19.3	70.1	19.4

**NUTRI-CAL SOLUBLIZES THE CALCIUM ALREADY
PRESENT IN THE SOIL!**

Iowa State University Agronomy Department

Field Soil Tests: Ankeny, Iowa

Nutri-Cal applied at 2.5 gallons/acre

	pH	Exchange Ca	Lime Rec.
Before	6.3	7,000	3,500
1 Month	7.0	8,500	1,100
2 Months	7.2	10,500	0
One Year	6.8	9,500	1,500

**BEFOR
E**

AFTER

pH Readings After 5 gal/acre Nutri-Cal Applied

Soil pH 5.7

12 hrs	24 hrs	36 hrs	48 hrs	72 hrs	One Week
6.38	6.65	6.73	6.91	6.85	6.82

Harris
Laboratories

Effectiveness of Treated (Solu-Lime) Compared to Conventional Lime

Treatment	Exchangeable Ca (ppm)			CABS (Percent)		
	2	5	8	2	5	8
Control	346	400	292	44.2	41.8	41.7
Regular Lime, 2000 lbs.	384	443	268	50.8	47.6	42.3
Solu-Lime, 500 lbs.	420	421	426	47.1	47.5	50.4
Solu-Lime, 1000 lbs.	474	571	434	51.2	50.0	51.6

- Pelletized lime was source of treated and untreated
- Solu-Lime is T.O.G. combined with lime
- Soil pH was 5.5, C.E.C. was 4.0
- **T.O.G. DOUBLED THE AMOUNT OF CALCIUM AVAILABLE VS LIME AFTER 8 WEEKS**

(Ruemmele, Bridget, University Rhode Island. 1995)

DEL MAR RACE TRACK TESTIMONIAL

PROGRAM BEFORE: alternating 20 lbs./1000 Calcium Carbonate and 20 lbs. calcium sulfate every other month

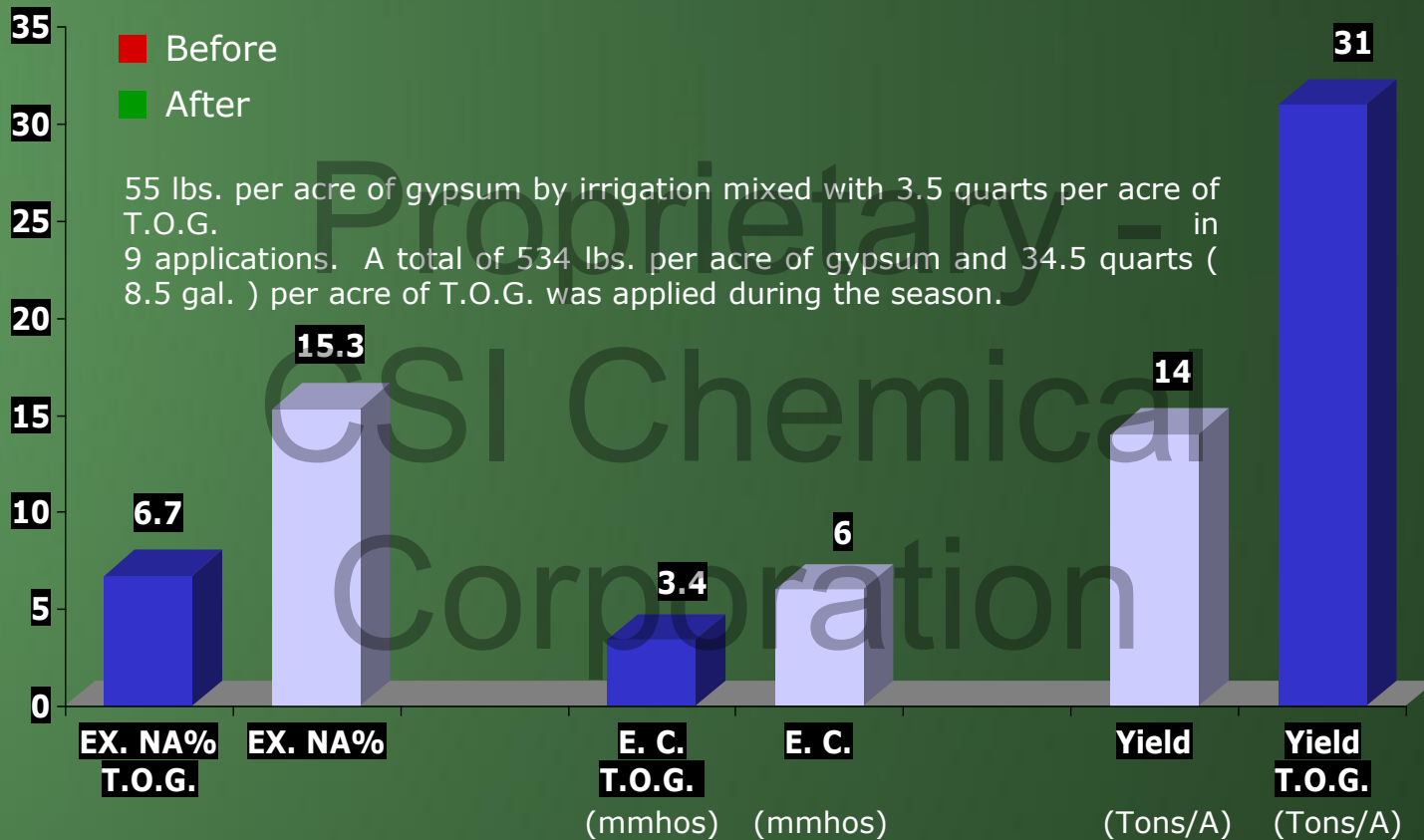
NUTRI-CAL PROGRAM: 12 ounces/1000 every month applied through fertigation system and ground sprayer

RESULTS:

BEFORE	740 LBS. NA /A	%NA Base Saturation	14.5
AFTER 4 MONTHS	332 LBS. NA/A	%NA Base Saturation	8.3

Leif Derickson

Effects of T.O.G. and Gypsum on Exchangeable Sodium and Electric Conductivity



Influence of T.O.G. on Nutrient Uptake and Translocation

