Calcium is the Best Remedy for Poorly Producing Soils.

Available Calcium in the Soil Can Provide Many Benefits:

Improved Soil Structure

Improved Nutrient Uptake

Balanced pH

Decreased Disease

Less Hardpan

Reduced Salts

Increased Drought Tolerance

Physiological plant disorders are caused by non-pathological conditions such as poor light, adverse weather, waterlogging, phytotoxic compounds or a lack of nutrients, and affect the functioning of the plant system.

Calcium: The King of Crop Nutrients

Proper amounts of Ca make soils workable, well flocculated and helps create a good air-water relationship in the soil making it a priceless asset.

Study after study shows Ca at the optimum level will decrease disease in most plants.

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CleanGreen®

Organic Calcium

Improve Nutrient Availability

OMRI® LISTED For Organic Use

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% BASE SATURATION OF FIVE MAJOR SOIL CATIONS [+]

NUTRIENT EXCHANGE CAPACITY

–NUTRIENT	EXCHANGE CAPACITY	% NAT'L BALANCE	RATIO TO CA	TRADITIONALISTS SAY:
CA	1 to 1	70 to 80%	POINTMAN	55 to 65%
MG	1.66 to 1	10 to 12%	6 to 1	15 to 40%
K	1.03 to 1	2 to 3½ %	23 to 1	5 to 15% not to exceed MG
NA	1.82 to 1	¾ to 1%	54 to 1	not over 15%
H	————	6 to 10%	————	?? who cares it's FREE!

***The "Cation" nutrients, listed above, in your soil are a very vital key to **healthy** soil life! The Cation Balance helps regulate the homeostasis process, or to put it simply.... "That's the crops ability to balance its total body functions. Homeostasis should be controlled and stabilized by CALCIUM! Excess MG, or NA produces a very deadly poison within the cell body, which can have a destructive effect upon the plant.

WHAT ARE CATIONS???

Cations are the positive charged nutrients in the soil. The most common cations are Calcium, Magnesium, Potash, Sodium and Hydrogen. Their balance to each other and to the other negative charged nutrients is very vital. Following are some basic truths to consider about Cations:

1. **Calcium is the most important nutrient in your soil** and the proper balance of it to all other nutrients is very important.
2. A soil test is incomplete when the Sodium (NA) level is not included, which is common if you have been using a traditional dry fertilizer program. Sodium is the salt index to your soil WATCH IT CLOSELY!!!!
3. All Cation nutrients have a HOLDING or PULLING capacity that are in relationship to calcium (CA is the base nutrient and the comparison ratios will be 1 to 1 for CA, NA the highest 1.82 to 1). This means NA has 1.82 times more pulling capacity than CA, or it has a lot more holding power.
4. NOTICE: If other cation nutrients are not in proper balance to CA, then normally Hydrogen (H) will be out of balance. So watch the Hydrogen percentage level in the Cation balance instead of soil pH. If all your Cation (+) nutrients are in balance, both H and your soil pH is correct.

Why Are Cations So Important?

REMEMBER: The normal flow of a electric charge in nature is positive to negative! All clay and humus colloidal soil particles carry a negative charge on their surface, which attracts desirable positive charged nutrients.
If in proper balance, they are loosely held in the soil solution, which allows a growing plant with a (-) charged root to attract and take Cation (+) nutrients as needed.

EXAMPLE: As a plant needs calcium it removes it from the soil and it is replaced by another cation which can flow or move easily if the soil is in proper balance. This is base exchange at work! **BUT BEWARE** cations go out of balance with high usage of salty fertilization, high Mg, and heavy metal levels causing soil to tighten up with poor movement of nutrients to the growing plants. It can even get to the point, to where there are high nutrient levels in the soil and a plant be **unable to get desired nutrients.** KNOW YOUR SOIL!!!

Note: Calcium is the most important nutrient in your soil.

Calcium can become locked in the soil by high levels of iron and aluminum.

Nutrient balance is more important to watch than nutrient levels.

Calcium helps create a healthy environment for your plant, plus it is the carrier of all other nutrients to the plant. As calcium content in the plant drops, so can the protein, energy level and minerals of the plant.

Calcium stimulates growth of soil life, including nitrogen fixing bacteria.