



Aglime Quarterly

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Calcium, A Minor Nutrient with Major Effects

A recent article in AgAlert written by Bob Johnson, states: "Calcium deficiencies can lead to a wide range of crop disorders including blossom end rot of tomatoes, peppers, and melons; hollow heart or bruising of potatoes; bitter pit in apples; tip burn in lettuce; and can even increase the severity of numerous vegetable crop diseases." The symptoms of Calcium deficient disorders have been reported in literature for more than a hundred years. Studies confirmed growing crops with either too much or too little calcium could increase or decrease these disorders.

Plants need a constant supply of calcium and although a soil report may show plenty of calcium, there may not be enough that is plant available. Always check with your lab or Certified Crop Advisor regarding available calcium and your crops needs.

Calcium Helps Plants Stay Healthy in Many Ways



I know my CEC now what?

The lab reported the CEC, now you need to determine what cations (base nutrients) are present and in what quantities. This is called *Base Saturation*.

Base cations, listed in order of importance: Calcium, Magnesium, Potassium and Sodium, are the non-acidic nutrients that adsorb to the negative charge sites on the clay particles. While many other nutrient levels change month to month due to soil cycles and weather, the CEC will not change very much over the course of a year.

The Base Saturation concept has influenced many studies, most proving the importance of having more Calcium than any other base cation in the exchange system. Today we see many theories practiced, Base Saturation Percentages, Base Cation Saturation Ratio (BCSR) and Sufficiency Levels of Applied Nutrients (SLAN). Both historical and current studies agree that if nutrient levels are adequate the ratios are not as important, if there are not excesses that hinder the uptake of other nutrients. For example, if Ca, Mg or K were too high in relation to each other, it would interfere with the uptake of the other.

Bottom Line: Correct nutrient management aids in soil tilth, water infiltration, root development, and improved biological activity. Always check with your reputable Crop Advisor and lab for nutrient fertilizer advice.

References: *AgAlert, Jan 23 Edition, pg 15

**Calcium Deficiency Disorders in Plants, Ch 15, Sergio Tonette de Freitas, UC Davis California, UC Santa Catalina, Brazil. 031519