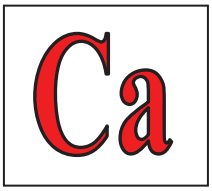

Soil Calcium (Ca^{++})

Calcium is the dominant cation in normal soils. As soils become acid, calcium is replaced by hydrogen and aluminum. When soils become alkaline, calcium is replaced by sodium. When sodium increases in the soil, clay particles disperse and hydraulic conductivity becomes restricted. Calcium is a critical plant structural component in cell walls and calcium also acts in signal conduction between the environmental factors and the plant's response.

The role of calcium in IPM

Calcium plays a critical role in management of rapid blight caused by *Labyrinthula terrestris*. Calcium does not directly suppress the disease, but increased calcium levels ensure that sodium does not accumulate to levels above 110 ppm by Mehlich III extraction. Adequate calcium is also known to result in healthy soil and turf conditions that results in suppression of various weed species.

Guidelines

	Low	Normal	Excessive
Mehlich III SLAN	< 750 mg/kg	>750 mg/kg	unknown
Mehlich III BSCR	<60%	60 - 85 %	unknown
Saturated Paste	< 60 mg/l	60 - 200 mg/l	unknown
Saturated Paste %	<20	>20%	unknown

Management

Products that are commonly used to help manage sodium or to supply calcium to deficient soils:

15-0-0 Calcium nitrate

$CaCO_3$ lime

$CaSO_4$*2H2O Magnesium sulfate (Epsom Salt)

$CaCl_2$ Calcium chloride