

SOIL REFERENCE



Soil Magnesium (Mg⁺⁺)

Magnesium is an essential element for plant growth and plays a key role in photosynthesis and other critical pathways in the plant. In recent years, high soil magnesium (>20% of the exchangeable cations) has been found to disperse clay particles in a fashion that is similar to the way high sodium can damage soil structure.

The role of magnesium in IPM

Sufficient and balanced magnesium in the soil are needed to provide the optimum turfgrass performance and weed suppression.

Guidelines

	Low	Normal	Excessive
Mehlich III SLAN	< 140 mg/kg	>140 mg/kg	unknown
Mehlich III BSCR	<12%	12 - 20 %	>20 %
Saturated Paste	< 20 mg/l	20 - 70 mg/l	unknown

Management

Products that are commonly used to increase soil magnesium levels are listed below.

10-0-0 Magnesium nitrate

CaCO₃ *MgCO₃ dolomitic lime

MgSO₄*7H₂O Magnesium sulfate (Epsom Salt)

0-0-22 MgSO₄*K₂SO₄ magnesium sulfate potassium sulfate (K-mag)

Magnesium sucrate Granusol magnesium

Reducing magnesium can be accomplished by increasing calcium applications followed by leaching rainfall or irrigation. In cases where magnesium is very high, for example serpentine soils, magnesium can not be reduced due to the very high levels of magnesium in this type of clay soil. In this situation, sand topdressing may be the only solution to improve drainage and aeration of the soil.