



# GYPsuMax<sup>®</sup>

A Charah<sup>®</sup> Agricultural Product



## Benefits of GypsuMax<sup>®</sup>

- Aids in disease prevention
- Increases crop yields
- Greater water solubility, allowing gypsum to be available to roots sooner than limestone
- Improves drainage through particle and clay flocculation
- Improves soil structure
- Decreases compaction through flocculation
- Reduces soil crusting and cracking
- Improves uniformity of plant growth
- Reclaims fields high in sodium and magnesium found in low quality soils and irrigation water
- Improves physical and chemical properties of soils
- Reduces erosion, loss of nutrients, and phosphorus concentrations
- Mitigates subsoil acidity and aluminum toxicity
- Enables better root penetration to plant nutrients such as nitrogen, sulfur, air, and water

Figure 1\*



**Figure 1\*** Application of synthetic gypsum increases water infiltration and percolation. Foreground shows section where the gypsum has been applied, and background shows the control section without gypsum. Norton and Rhoton, 2007.

### TYPICAL ANALYSIS Calcium Sulfate Dihydrate (Dry Weight Basis)

Calcium.....	21%
Sulfur .....	17%
pH .....	7-8
Particle Size.....	95% Passing #100
Bulk Density .....	~80 lbs/ft <sup>3</sup>
CaSO <sub>4</sub> -2H <sub>2</sub> O Purity .....	>90%
Free Moisture.....	7-14%

Rate = 1000 lbs/Acre

\*Source: Ohio State University Extension Bulletin 945



# GYPSUMax<sup>®</sup>

A Charah<sup>®</sup> Agricultural Product



## How It Works

**GypsuMax<sup>®</sup>**, a synthetic gypsum also known as calcium sulfate, is a highly soluble form of calcium and sulfur. In agriculture, it can aid in amending compacted soils and provide calcium and sulfur nutrition for a variety of crops including corn, soybean, alfalfa, peanuts, vegetables, and more. It separates into calcium and sulfate when it encounters moisture. When applied to soil, the sulfate attaches to excess magnesium on soil molecules. This process scrubs down the soil's composition. The calcium then replaces the magnesium on the soil molecule, allowing for improved soil structure.

Figure 1-1\*

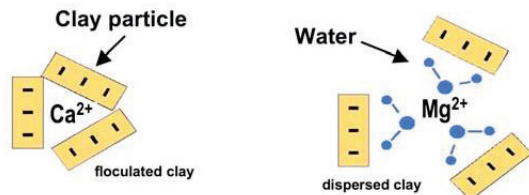
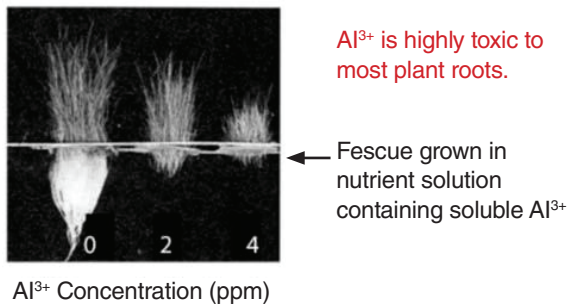


Figure 1-1\* The soluble calcium can overcome the dispersion effects of Mg and Na ions and help promote flocculation and improved soil structure. Illustration by Dr. Jerry Bigham, Ohio State University.

Figure 1-2\*



Al<sup>3+</sup> Concentration (ppm)

Figure 1-2\* Effects of aluminum (Al<sup>3+</sup>) on growth of fescue. Illustration adopted from Buckman and Brady (1969) and Dr. Jerry Bigham, Ohio State University.

Figure 1-3\*

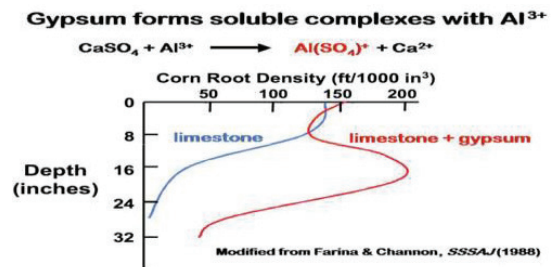


Figure 1-3\* Soluble aluminum (Al<sup>3+</sup>) is toxic to plants. Gypsum can react with Al<sup>3+</sup>, thus removing it from the soil solution and reducing its toxic effects on plant roots. Illustration by Dr. Jerry Bigham, Ohio State University.

\*Source: Ohio State University Extension Bulletin 945

For more information, visit [GypsuMax.com](http://GypsuMax.com) or call us at 844-822-8385.

Charah Inc., 12601 Plantside Drive, Louisville, KY 40299

GypsuMax<sup>®</sup> is a trademark of Charah, Inc.