

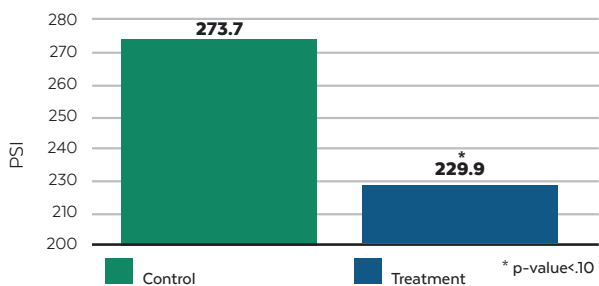
## Improved Soil Tilth

Healthy soil is the base of a productive and resilient farm. By enhancing nutrient availability and utilization, these products unlock your soil's full potential, leading to tangible benefits. Implementing Midwestern BioAg's recommended soil solutions, including Bio-Cal, renders visible improvements, including improved soil tilth and the return of biological activity.

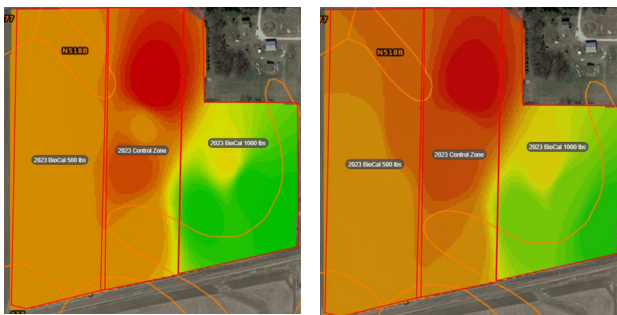
### Bio-Cal Decreased Spring Soil Compaction in Multi-Year No-Till Corn/Soy Trials -South Eastern MN

- Spring soil compaction was reduced 19% (44 PSI) with the application of Bio-Cal.
- Data was collected on multi-year Bio-Cal trials with EarthOptics soil penetrometer readings.

#### Impact of Bio-Cal on Soil Compaction 6" Soil Depth



### Bio-Cal increased Mid-Season Soil pH and bpH as application rate increased



**Acting as a catalyst in soil fertility programs, Bio-Cal helps to mobilize nutrients, unlock soil potential, and promote healthier, stronger plants all season long.**

#### More Plant-Available Calcium

Bio-Cal® provides higher levels of soluble calcium than many other products. Bio-Cal has 150 pounds of soluble calcium per ton while materials such as dolomitic and calcitic lime have varying amounts of soluble calcium, often as little as 1-2 pounds per ton.

#### Better Plant Health

For years, farmers have known calcium helps raise healthy, quality crops. Recent research supports this and has identified calcium as a key requirement for maintaining macro and micro nutrient availability in the soil and plant.

#### A Better Calcium Source

Multiple forms of calcium are present in Bio-Cal®, providing both highly available and slow-release calcium. These include calcium oxide and calcium carbonate.

#### Easy to Spread

Bio-Cal® is specially formulated for easy application.

#### High Quality

We routinely test to ensure materials used in Bio-Cal are free of contaminants. For more than 15 years, Bio-Cal has met or exceeded government standards for heavy metals and organic toxins.

# Bio-Cal®

## Highly Soluble Calcium for Optimum Crop Performance



 **Midwestern BioAg™**

10955 Blackhawk Drive  
Blue Mounds, WI 53517



YouTube

@midwesternbioag4752



@midwesternbioag



@midwesternbioag

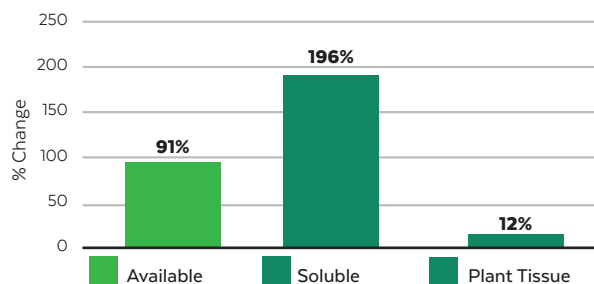
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**Bio-Cal's highly soluble formula enhances crop performance and optimizes manure efficiency in the first year.**

## Bio-Cal, when compared to traditional calcium/sulfur inputs, reported increase sulfur availability despite lower applied rates of sulfur

- Bio-Cal and Cal-Sul were applied at general use rates of applied calcium.
  - Bio-Cal - 472 Lbs/A.
  - Cal-Sul - 200 Lbs/A.
- Cal-Sul treatment applied 22.5 more pounds of sulfur per acre than Bio-Cal, yet reported lower levels of available, soluble, and plant tissue sulfur.

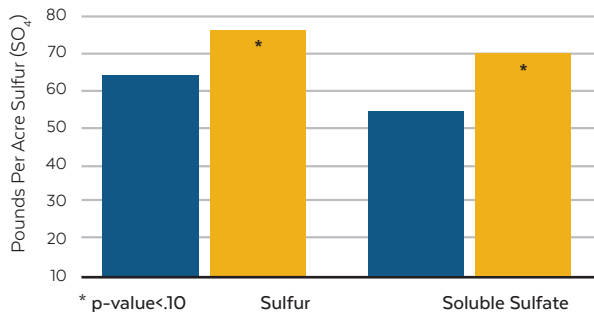
### Reported Changes in Sulfur Availability and Uptake When Treated With Bio-Cal Versus Cal-Sul



## Bio-Cal Trials Improved Sulfur Use Efficiency in all trials

- Soil available sulfur increased 20%.
- Soluble soil sulfur increased 28%.
- Converted sulfur to sulfate (\*2.996) reported a sulfate increase of approximately 12-15 pounds per acre.

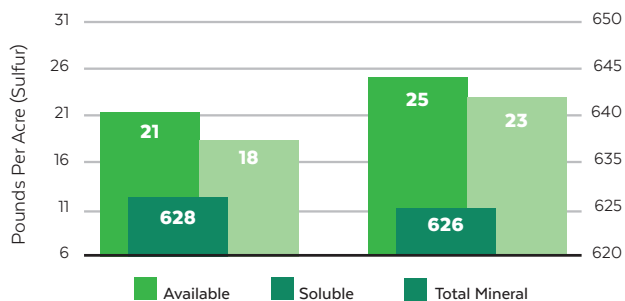
### Impact of Bio-Cal on Soil Sulfur Availability 2023-2024



## Total Sulfur Pools Remain Consistent Suggesting Bio-Cal Improved the Availability and Solubility of Soil Sulfur

- Total sulfur pools remain unchanged by addition of Bio-Cal.
- Bio-Cal increased available and soluble sulfur pools 20% and 28% respectively.
- Increases in available and soluble sulfur pools suggest Bio-Cal is enhancing the biochemical cycling of soil sulfur.

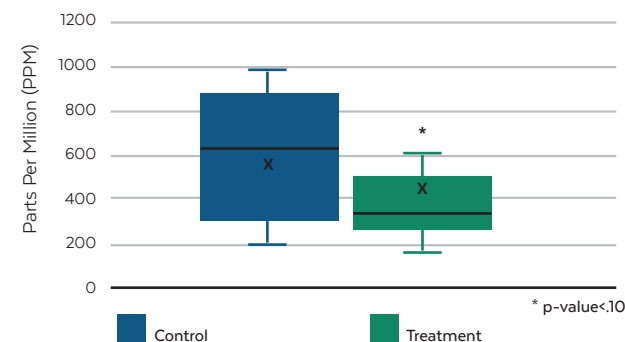
### Reported Changes in Sulfur Availability and Uptake When Treated With Bio-Cal Versus Cal-Sul



## Multi-Year Bio-Cal Trial Reported reduced soil magnesium on a dolomitic parent material - SC Wisconsin

- Bio-Cal reduced soil magnesium levels by 32% compared to the control treatment zones.
- The 32% reduction in soil magnesium levels equated to 386 pounds per acre of magnesium impacted by the application of Bio-Cal.

### Impact of Bio-Cal Soil Magnesium



## Base Saturation Percentage of Magnesium was also reduced - no other cation base saturation percentages were impacted

- Base Saturation Magnesium was reduced 5.66% (26% Mg - 20% Mg).
- No other base saturations percentages were impacted by the application of Bio-Cal.

### Impact of Bio-Cal on Base Saturation Percent Magnesium

