AGRITEC
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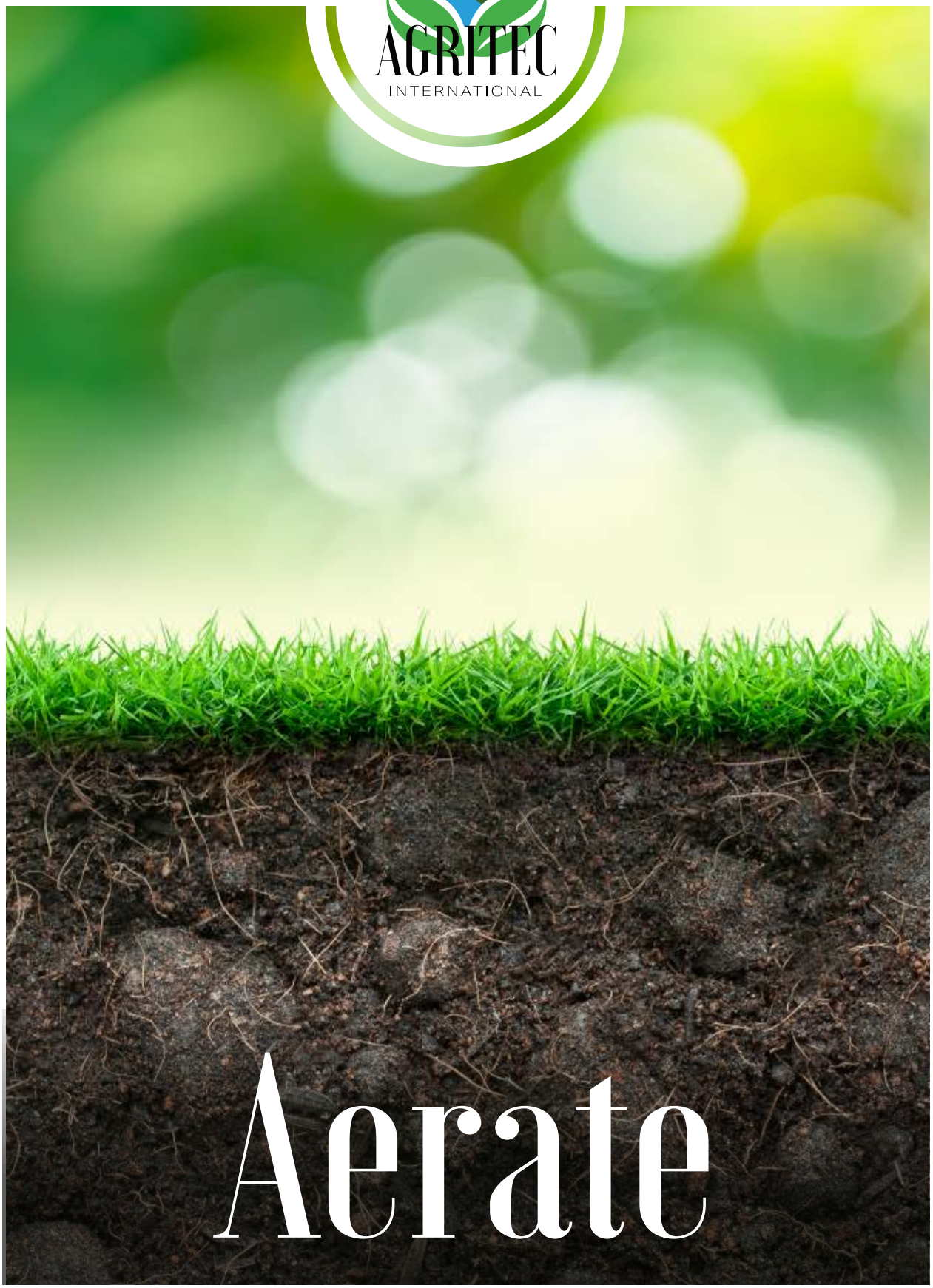


Aerate

SOIL VITALITY

AERATE CATALOG

www.agritecint.com

INTRODUCTION

Unlock the Full Potential of Your Soil with Aerate

Welcome to the revolution in soil management! With today's agricultural demands, ensuring the health and efficiency of your soil is more critical than ever. That's where Aerate steps in - a cutting edge soil amendment designed to combat the pervasive challenge of soil compaction with unprecedented ease and effectiveness.

Developed for the progressive farmer, Aerate offers a scientifically advanced solution that transforms the foundational aspects of your soil. It's not just about aerating; it's about redefining what your soil can do. Aerate's positively charged formulation makes it standout, offering long-lasting improvements in soil structure, water distribution, and nutrient availability that you can see from the first signs of growth.

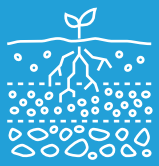
Embrace a new standard of soil health and productivity. With Aerate, the pathway to revitalized land and flourishing crops is not just possible - it's within reach.

How Aerate Unlocks Superior Soil Performance

At the core of Aerate's success is its unique anionic composition. This innovation is where the magic begins.

Molecular Breakthrough:

Aerate operates on a molecular level, utilizing its positively charged particles to penetratee and disrupt the tightly bound particles in compacted soils. This causes a separation of soil particles, which is essential for improving soil structure.



Enhanced Aeration

By creating space between soil particles, Aerate allows for increase oxygen flow, crucial for root respiration and microbial activity. This oxygen boost is vital for enabling roots to breathe and expand, fostering a robust subterranean environment where plants thrive.

Water Dynamics Refined:

With its superior infiltration properties, Aerate enhances water dispersion within the soil. This ensures water reaches deeper into the soil profile, reducing runoff and maximizing every drop's effectiveness for your crops.

Nutrient Accessibility:

The product not only liberates your soil but also unlocks nutrients that are often trapped in compacted ground. The increased nutrient availability means plants can absorb a more nutritious diet directly from their roots, leading to healthier, more vigorous growth.

Synergisticc Integration:

When mixed with fertilizers and other agricultural chemicals, Aerate acts synergistically to improve their distribution and absorption in the soil. This means that every application is optimized, reducing the need for multiple passes and saving time and resources.

Surfactant Synergy: Enhancing Soil Dynamics with ALS

Ammonium lauryl sulfate (ALS) is primarily known as a surfactant, commonly found in household and industrial cleaning products, including shampoos and detergents. Its application in agriculture, specifically to soil, is less conventional but can have interesting effects due to its surfactant properties. When applied to soil, ALS can influence soil structure and dynamics in several ways, potentially reducing compaction and improving soil health indirectly. **Here's how:**

Soil Aggregate

Soil aggregates are groups of soil particles that bind together more strongly than to adjacent particles. The stability of these aggregates is crucial for soil health, affecting aeration, water infiltration, and root growth. Surfactants can affect the binding forces between soil particles, potentially improving aggregate stability and thus reducing compaction. Improved aggregation allows for better air and water movement through the soil, enhancing root development and soil microbial activity.

Surfactant Action

Surfactants like ALS reduce the surface tension of water, which can improve water infiltration into the soil. In compacted soils, water infiltration is often poor, leading to runoff and erosion. By enhancing water penetration, ALS can help water to distribute more evenly throughout the soil profile, reaching plant roots more effectively and promoting healthier plant growth.

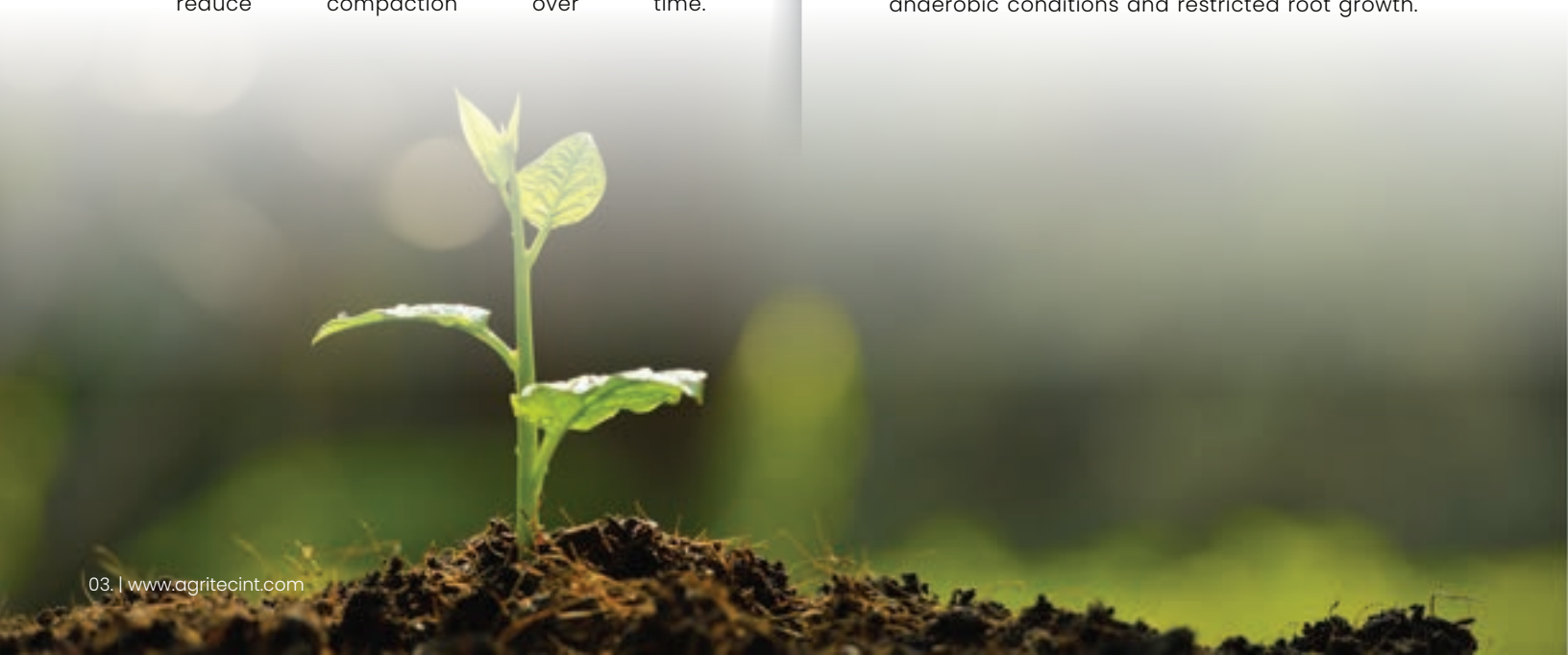
ALS

Indirect Effects

Healthy soil is teeming with microorganisms and fauna that contribute to soil structure, nutrient cycling, and plant health. Improved soil structure and aeration, as a result of ALS application, can create a more favorable environment for these organisms. Their activities, in turn, help to maintain and further improve soil structure and reduce compaction over time.

Aeration & Drainage

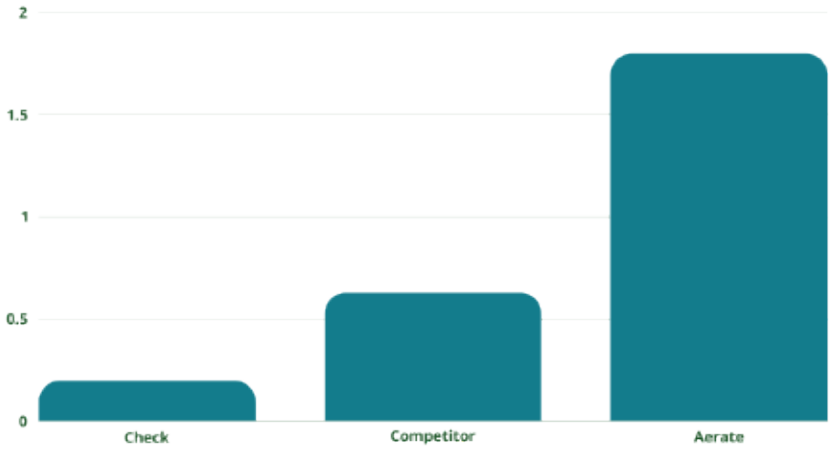
By improving water infiltration, ALS can indirectly enhance soil aeration and drainage. Compacted soils have reduced pore space, limiting air movement and water drainage. With better infiltration, soils can maintain a healthier balance of air and water within the pore spaces, reducing the risks associated with soil compaction, such as anaerobic conditions and restricted root growth.



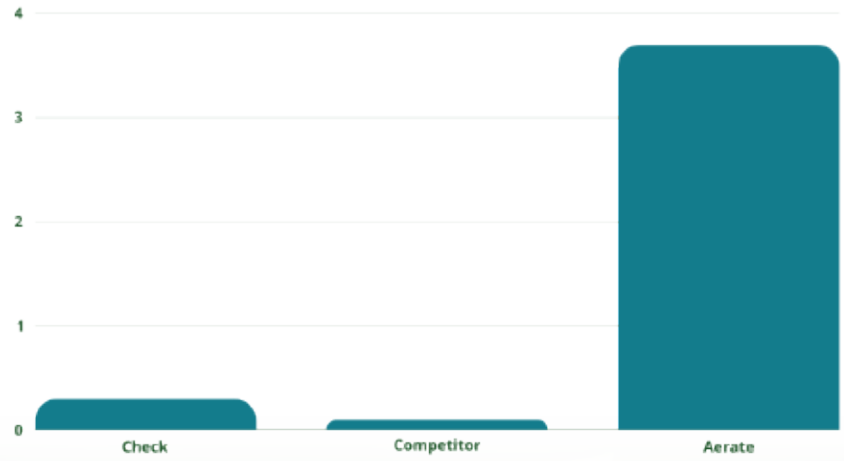
It's important to note that while surfactants like ALS can offer these benefits, their use in agriculture should be approached with caution. The concentration and frequency of application need to be carefully managed to avoid negative environmental impacts, such as potential toxicity to soil microorganisms and plants, or leaching into groundwater. Consulting with soil and agricultural experts is advisable to determine the appropriate use and application rates of ALS or any surfactant in agricultural settings. This ensures that the benefits are maximized without harming the soil ecosystem or the wider environment.

Surfactant Synergy: Enhancing Soil Dynamics with ALS

Velocity of Infiltration (A Horizon)



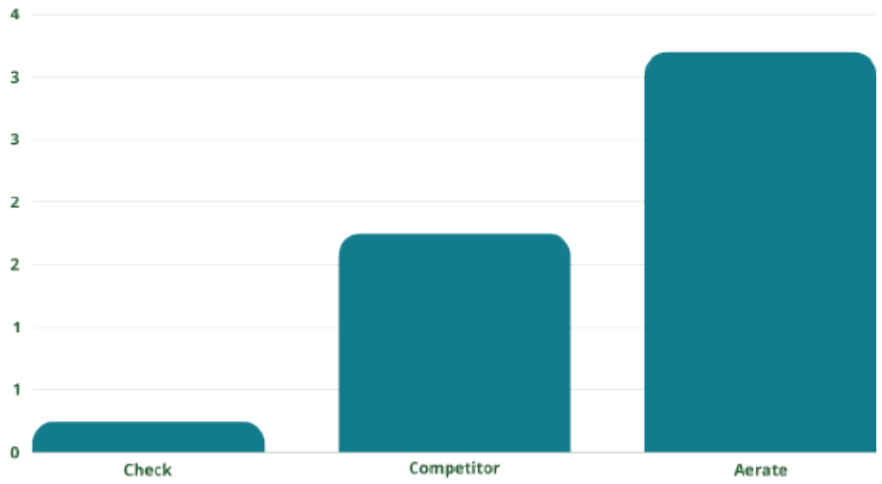
Velocity of Infiltration (B Horizon)



In a study from 2022 done in Avocado, Aerate was tested against another soil conditioner and a non-treated sample. The competitor's product was used as per their instructions, and results were recorded 30 days later. In the A Horizon (illustrated top graph) of the soil's surface layer, Aerate enhanced water penetration by 59% more than its competitor and 307% more than the untreated sample.

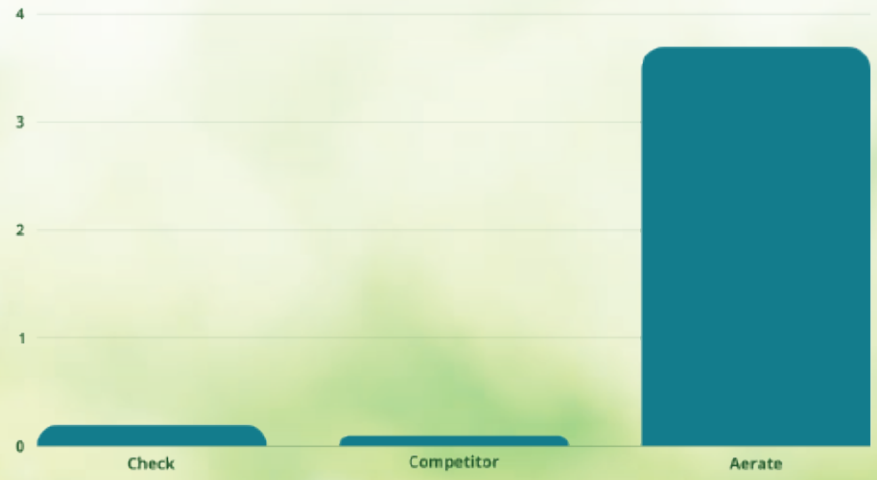
In the subsoil, or B Horizon, Aerate's performance was even more notable, with an increase of 1279% in water penetration compared to the competitor, and 1190% over the untreated control.

Velocity of Infiltration (A Horizon)



This experiement was replicated at a different location using identical methods. In this second test, in the A Horizon, Aerate outperformed a competing product by 67% in water penetration and showed a 792% increase compared to the control without treatment.

Velocity of Infiltration (B Horizon)



For the B Horizon, Aerate also demonstrated superior performance, with an 82% increase in water infiltration over the competitive product and a 320% enhancement compared to the untreated control. This study highlights Aerate's positive impact on water penetration, bulk density, and soil compaction in critical root growth areas of both the A and B horizons.

PROVEN EFFECTIVE BY NATURE, TRUSTED BY CULTIVATORS.

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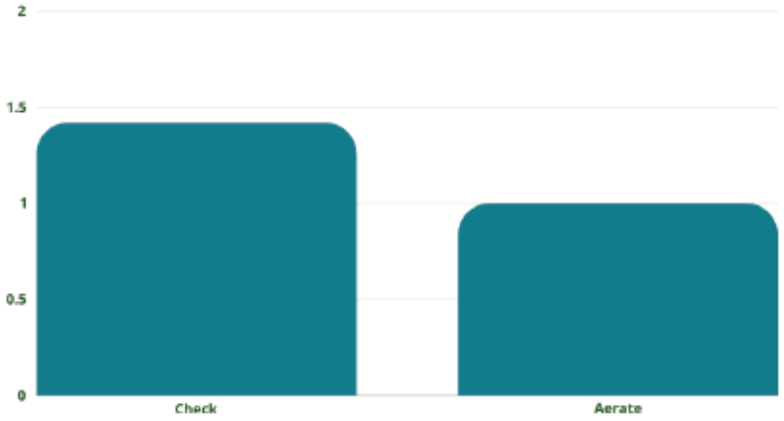
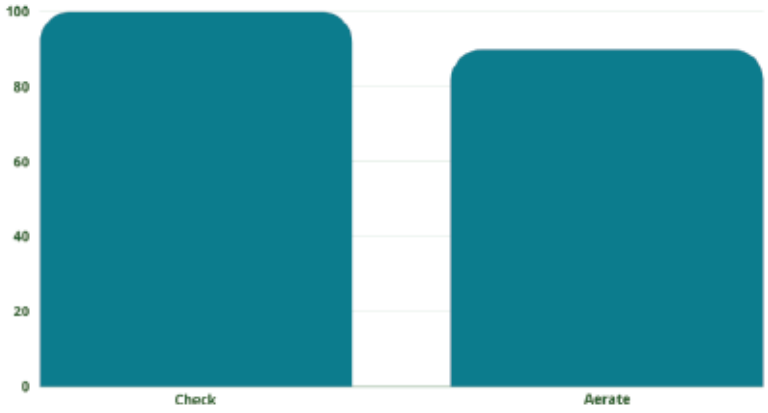
To further validate these findings, soil compaction was directly measured in the A Horizon (middle graph). The Aerate treated area showed a 10% reduction in compaction compared to the control. In the B Horizon (bottom right), compaction was reduced by 25% over the control.

These results indicate that crops in Aerate treated soil can develop wider, deeper root systems, tapping into previously unreachable nutrients and water sources.

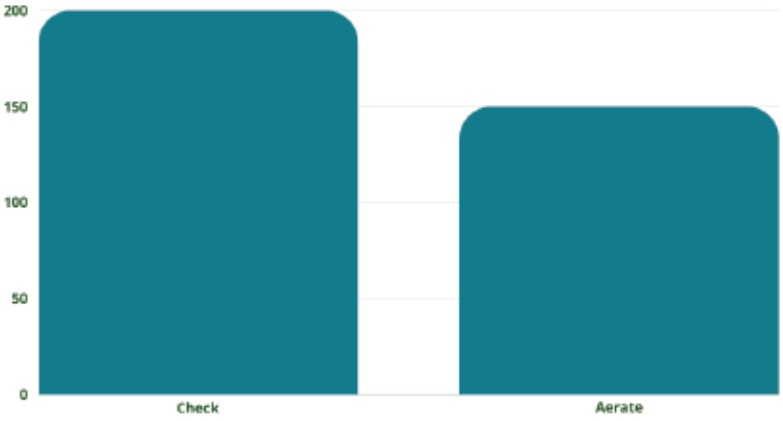
Bulk Density (g/cm3)



Compaction (A Horizon)



Compaction (B Horizon)



Just wanted to give you an update on your product Aerate. I pulled some plugs today. I went down 12 inches with them. First off, I haven't been able to go that deep with plugs in several years, and second, the roots from my rye were still going out the end of the plugs. I haven't seen roots over 5 to 6 inches as long as I can remember. And lastly, the wet spots in this field have sat saturated with water for over a week from heavy rains, and while I was doing the sampling today there was no water spots and we just received two inches of rain three days ago. So I am a very happy customer.

Doug, 2024

Just a week after applying Aerate on our compacted ground I was able to actually sink my fingers in the dirt. It loosened the ground right up.

Josh, 2022

My fields have done much better this year. That Aerate did wonders in the field. It is draining so much better.

Dave, 2021