

The Mechanical Aeration Myth

The Myth:

From the dawn of time, everyone from golf course superintendents, sports field managers, and lawn care operators has been told that the only way to reduce soil compaction is by mechanical aeration. The reasoning is that pulling plugs out of the ground is the only way to get water, air, and nutrients down into hard soils. Also, removing soil in the form of plugs will allow room for the roots of the grass to more easily penetrate farther down into the soil.

The Truth:

To understand the truth, one needs to know what soil compaction really is. By definition, soil compaction is the breakdown of soil structure. Good soil structure consists of individual soil particles that have combined to make larger soil aggregates. When soil is well-aggregated, pore space exists between the aggregates, allowing water, air, nutrients, and roots to penetrate the soil. An example of this would be a jar full of marbles and all the space between them. When the soil structure is broken down, the aggregates are broken apart into individual soil particles. This decreases the pore space between the particles, causing compaction. In contrast to the jar full of marbles, the decreased pore space would look like a jar full of sugar, where everything is packed tightly together.

The myth of mechanical aeration lays here, that removing small plugs of soil changes the structure of the soil. It does not. All it does is provide a very temporary relief to the soil compaction, and that is at best. I say “at best” because when one runs a mechanical aerator over a given area, the area that is actually affected is very small, just 3-5%. You can see the complete report [here](#). So even as a temporary relief, the area that mechanical aeration affects is very small.

The Solution:

SoilTech resolves the 2 major faults of mechanical aeration – soil structure and coverage. What SoilTech does when applied to compacted soils is reverse the breakdown of soil aggregates. SoilTech makes the individual soil particles re-aggregate. It does this by using the charges in the polymer itself and by creating pore space with the polymer, allowing the soil particles to naturally re-aggregate. Think of SoilTech as a flocculent, changing the jar full of sugar back into a jar full of marbles.

Secondly, since SoilTech is a liquid you can apply to an entire area, 100% of the area will be affected by the product and not just 3-5%. This greatly increases the effectiveness of SoilTech over traditional mechanical aeration. Read a more detailed explanation of how SoilTech works.

I'm not saying that mechanical aeration doesn't have its place in agronomy, such as situations where a thatch layer is restricting movement into the soil. But when it comes to correcting the true problem of soil compaction and not just treating the symptoms, mechanical aeration is a myth and SoilTech is the truth.