
Efficacy of SoilTech

SoilTech is a convenient liquid formula, which is simply mixed with water and applied to the soil. SoilTech is a polymer mixture that opens up pathways in the soil and agglomerates (clumps) soil particles. In concentrated form, the polymer molecules in SoilTech are tightly compressed and occupy very little space. When mixed with water and applied to the soil, these tightly coiled molecules begin to uncoil, extend and expand.

Aided by gravitational pull and its electrical properties, this molecular expansion literally forces SoilTech down into the soil horizon opening pathways along its journey. As the journey continues downward and the molecules continue to expand, beneficial changes to the structure and texture of the topsoil occur.

SoilTech will not harm vegetation, soil bacteria or any soil organisms. Not a wetting agent, SoilTech maintains performance for five to seven months, sometimes longer depending on the soil condition.

Why Use SoilTech?

The ultimate value and useful nature of topsoil depends upon the physical structure of that soil. Along with plant nutrients, a soil must have a continuous supply of both air and moisture.

Soils with poor structure may become waterlogged during wet seasons, thus preventing the proper air for optimum plant growth. Soils may lose moisture too rapidly by evaporation from the surface due to excessive capillary action and the plants growing in this type of soil are deprived of its moisture supply. In compacted soils, the plant roots have trouble penetrating and are halted.

The real answer to remedy the problem has to be to restore the tilth (pore space) back into the soil. Plant roots need crumbly, well-aerated soil to grow and to obtain oxygen, water and nutrients. Lacking good soil aeration, roots suffocate and plant health declines.

SoilTech provides a method of quickly developing good soil structure. SoilTech binds the fine soil particles into larger bodies or crumbs providing proper pore space for the air and moisture. The compacted and clay layers will be easier to till.

The rate of evaporation of water from the surface is affected by soil structure. A soil of good structure will, in addition to capillary pores, have a large number of non-capillary pores. The action of these non-capillary pores is to break the connection or link of the capillary pores to slow down movement of moisture by capillary action. The transfer of



capillary water to the surface of the soil is slowed down, and therefore the loss of moisture by evaporation from the surface is greatly reduced. Therefore during dry weather you may water less often.

In areas where standing water after heavy rains occurs, SoilTech applications will greatly reduce or eliminate areas where standing water has been a problem. Increasing the soil porosity increases the rate of water infiltration and percolation.

Treated soils composed of larger soil aggregates result in reduced runoff during a rainfall and therefore reduced erosion by running water. The soil aggregates, by virtue of their size and weight, are less readily carried by water run-off.

Many soils contain too many mineral salts, including sodium. The increase of salt (such as sodium chloride) in the soil has increased compaction and caused serious problems to plant growth. SoilTech will disperse the mineral salts deeper into the soil and out of the growing area, rebuild the soil structure and allow the plant to absorb more nutrients.

After 30-60 days you will notice that the ground is softer and plant root depth markedly deeper. These remarkable changes to the structure and texture of the soil make SoilTech a wise addition to a good soil management program.

How Does SoilTech Work?

SoilTech produces a sticky solution of a strong negatively charged polymer mixture that covers very fine particles of soil that have disassociated, causing them to bind these fines into larger clumps. Clumping of very fine particles into larger bodies or crumbs takes place. The resultant pore space allows air and water unrestricted movement through the soil.

Water percolation and infiltration is improved as a result of the new pore spaces, allowing plants to transfer and uptake nutrient solutions at a much greater rate and from much greater distances.

This reaction provides deeper water penetration for the plants and much lower run-off rates. The fact that the amount of fines is greatly reduced and the soil particles are larger makes them less likely to be transported in the water flow. This also helps to slow water movement in the soil thereby reducing erosion by running water.

The negative charge of SoilTech helps the positive charged nutrients wick their way to the plant root systems-without tying up their availability. The plants better utilize fertilizer applications, and less pollution due to fertilizer run-off is markedly reduced.

Functional groups at the tips of the polymer molecule will literally bind alkaline mineral deposits and break up hardpan layers.

SOIL TECHNOLOGIES

These two photographs are of Oklahoma chandler clay topsoil samples taken from the same exact site. The left sample was treated with water only. The right sample was treated two times with 2.0% SoilTech solution (10 days between treatments). Both samples were allowed to air dry at room temperature for 30 days. Note that the individual particle sizes are substantially larger on the right sample. The treated sample has retained moisture while the untreated sample is dry.



How Do You Apply SoilTech?

Use an adjustable hose-end sprayer and set dial to 2oz. or 4 tbsp. Spray ground evenly with spray solution. Within 24 hours follow-up with irrigation or watering in one-quarter inch of sprayed areas.

Standard coverage rate should approximate one quart SoilTech per 8000 square feet. For extremely compacted soils, two applications 10 to 30 days apart are recommended.

SoilTech can be combined with irrigation systems such as line or sprinkler. It can also be applied as a tank solution simply sprayed onto the soil before irrigation or precipitation.

SoilTech is designed as a routine treatment in the spring and fall. For areas where standing water has been a problem apply SoilTech at the rate of one pint per 500 square feet.

SoilTech is compatible with virtually all fertilizers (except high calcium), pesticides, and herbicides. Check with Material Safety Data Sheets and test compatibility with a small sample before attempting to combine any chemical products.

The prescribed amount on the SoilTech label will probably cover most applications, however, in very difficult conditions (such as tightly packed clay, hardpan soils, areas of



high mineral salts, and soils with poor pH) increase treatment rates up to a factor of two times will show positive results within 30-60 days.

What Are the Benefits of SoilTech?

- The consumption by the plants of the essential plant nutrients is greatly improved following treatment of SoilTech. These nutrients are made available in the root zone of plants thereby increasing plant uptake and eliminating fertilizer waste.
- The discharge of nitrates and phosphates are reduced thereby reducing ground water contamination.
- If applied to areas of standing water or flood areas, it will increase infiltration and percolation of water through the soil horizon thereby reducing soil erosion.
- Improves plant prospects during drought by allowing water to wick up the soil profile.
- Increased soil pore space allows more oxygen to penetrate the soil and plant root zones. Aerobic microorganism activity increases that allow more raw elements to be converted to a usable plant food source.
- Dispersion of salts through the soil horizon and out of the growing area, which allows the plant to absorb more nutrients.
- Breaks up hard soil layer. Restores productivity of the soil by chemical aeration.
- Removes alkaline mineral deposits and repairs problems that sodium causes to the soil structure similar to gypsum.