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DEALING WITH SUMMER STRESS & DROUGHT

In the summer months, water can often become a limiting factor in maintaining high-quality turf. As we deal with water restrictions that apply to watering lawns and landscapes in the Austin area, we must be highly efficient with our water resources. This involves paying careful attention to how much water we apply to our landscapes as well as treating or correcting conditions that waste applied water or prevent water from reaching plant roots.

Water Repellent Soils

Have you noticed water running off slopes or “draining” into the street during and after you water your lawn?

During prolonged periods of heat and drought, thatch, surface and litter at or near the soil surface can become coated with wax-like substances that cause the thatch and soil particles to become water repellent. Water applied to the turfgrass may have difficulty penetrating through thatch as well as moving uniformly into and through the soil profile.

Water repellency (hydrophobicity) is commonplace on thatch/mat, surface litter and soil particle surfaces found on, at or near the soil surface (0 – 2 inches).

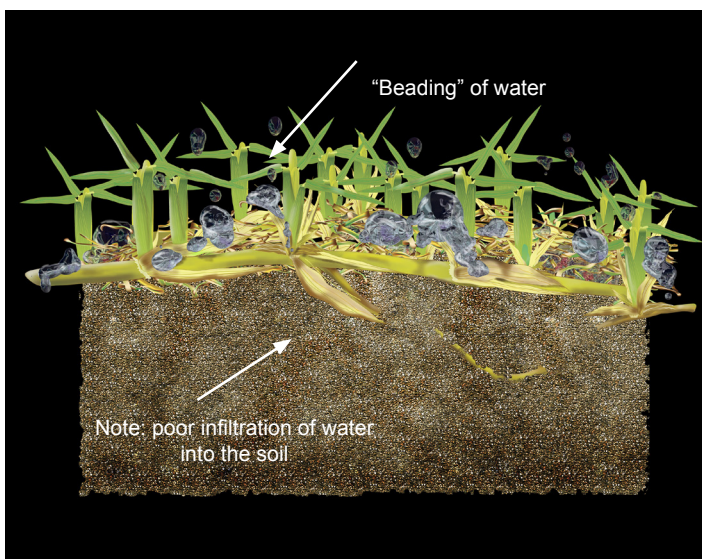
Regardless of how uniformly you apply water to your lawn, if the surface area is water repellent, water will have difficulty moving into and through the soil profile.

Non-uniform Wetting of Rootzone

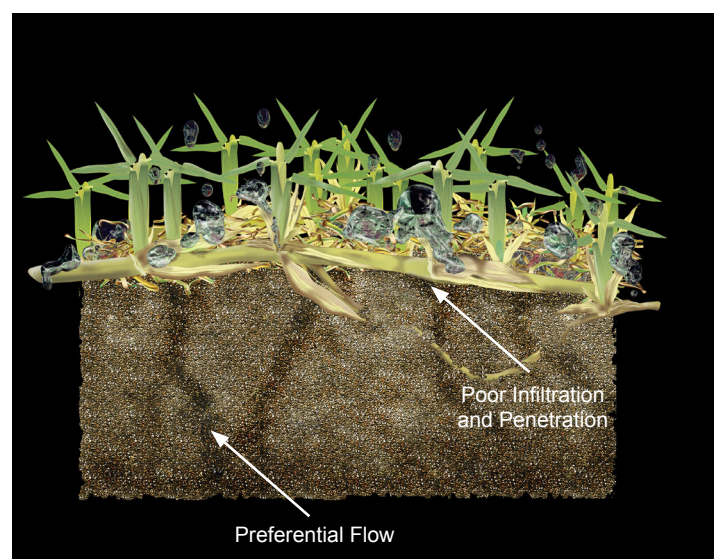
When water encounters water repellent areas as it moves through the soil, it cannot adhere to the surfaces of the soil particles. This causes a disruption in uniform movement through the rootzone. This can create areas of preferential flow (sometimes call “fingers” of water movement) that rapidly move water away from the rootzone.

Poor Water Retention

Another problem associated with water repellency is an inability of the soil to adsorb, or retain water as it moves down through the rootzone -- leaving sections of the soil without an adequate supply of water and nutrients for grass roots.



Cross section of soil profile showing “beads” of water sitting on thatch, litter and soil surface as the result of water repellency.



Cross section of soil profile showing non-uniform wetting – resulting in preferential flow (fingered water movement) of water.

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Treating Water Repellency in Lawns

Water repellency is primarily a surface or near surface phenomenon and correcting water repellency in thatch and the first 1-2 inches of soil will substantially improve the ability of lawns to survive drought conditions and during periods where water restrictions are in effect.



CISTERN
SOIL SURFACTANT AND HUMECTANT COMPLEX

Application of CISTERN Soil Surfactant is recommended by [YOUR COMPANY NAME] as part of our professional turf care water management programs to correct water-repellent conditions in the thatch and soil.

LUNAR contains a blend of complementary surfactant molecules and a humectant complex work together to help the grass to tolerate water deficit and heat stress by correcting water repellent conditions in the surface and subsurface layers of the soil profile as well as by improving the soil's ability to acquire and retain water .

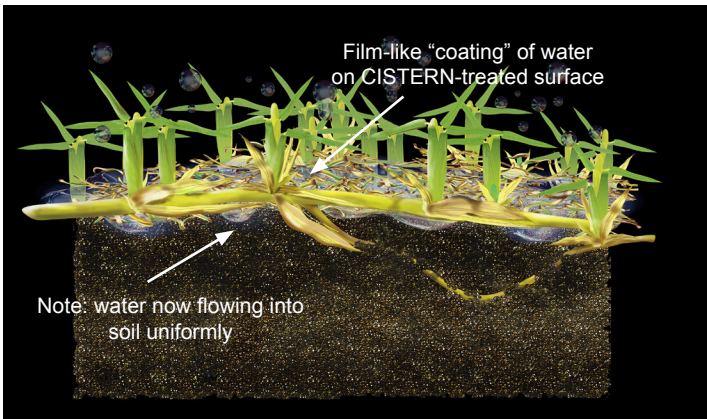
How it Works

When water comes in contact with water repellent surfaces, it cannot grab on to the surface in order to "spread out." You've seen water "bead" when applied to a car hood that's just been waxed. It's the same thing. Wax is water repellent.

The larger size of these water droplets often prevents penetration of water through spaces or openings in thatch, surface litter and the soil surface.

When CISTERN is applied to the lawn, its surfactant molecules serve as sites for water molecule attachment.

When water attaches to the surfactants, it reduces surface tension and "beading" of water is replaced with a film-like "coating" that facilitates penetration through the thatch and into the soil.

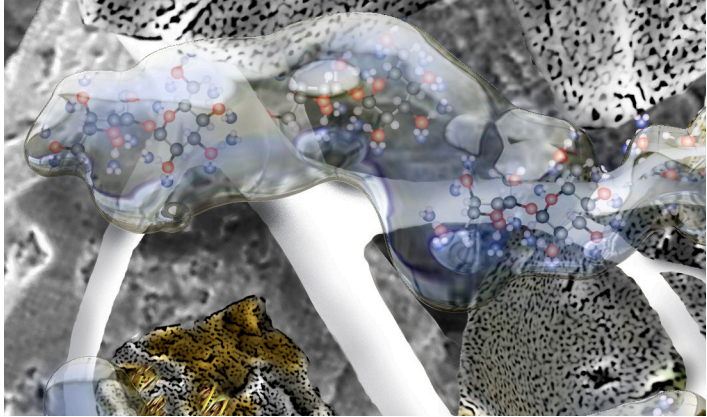


Reduction in surface tension results in a film-like "coating" of applied water that quickly moves through the thatch area and facilitates penetration and infiltration of water into and through the soil.

Once water attaches to surfactants on soil surfaces, flow of water through the soil profile is more uniform. **In addition, more water is held in the soil, creating reservoirs of water for use by roots.**

Humectants

The CISTERN formulation also contains humectants that attract water molecules from air spaces within the soil profile and when required by the plant, make these water molecules "available" for uptake by the plant root system.



Graphic depiction of hydrated humate molecules providing a unique source of water to fine roots.

When used in conjunction with our standard professional lawn care service, the use of CISTERN will:

- Increase water use effectiveness and efficiency
- Increase infiltration rates and reduce runoff
- Promote uniform movement and availability of water, fertilizers and other water soluble materials into and throughout the rootzone
- Reduce moisture stress to turfgrass
- Improve recovery from summer heat and drought

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Contact Information