HYDRETAIN IN THE DESERT:
A GUIDE TO SUCCESSFUL APPLICATIONS IN ARID CLIMATES

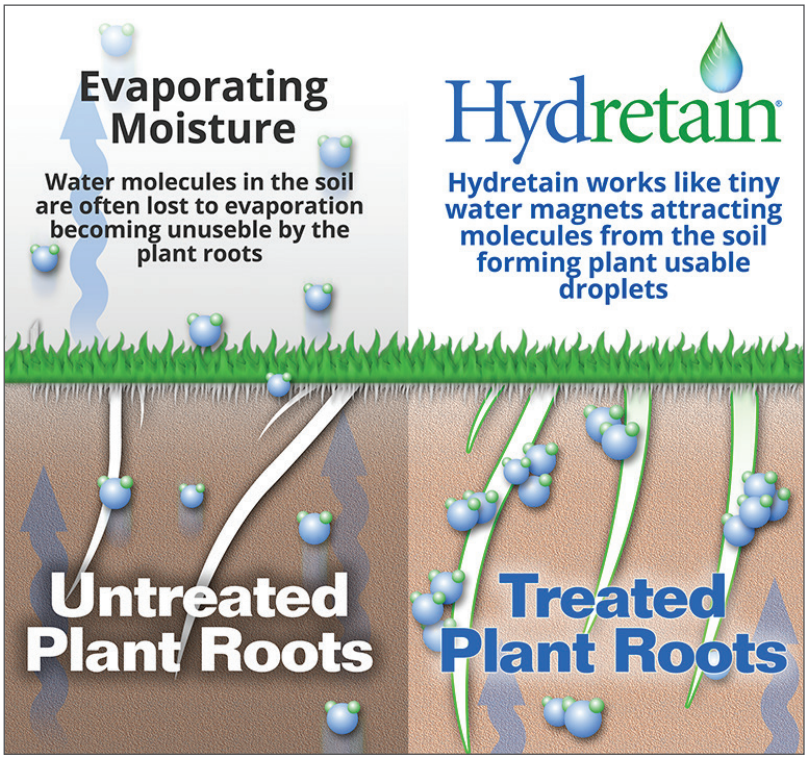
One of the biggest misconceptions about Hydretain is that it pulls moisture *down into the soil from the air above* to create water droplets for plant roots to use. This belief creates questions about Hydretain's ability to perform in arid climates.

While Hydretain does have the ability to condense moisture vapor (humidity in the air) into plant usable water droplets, the misunderstanding lies in where that humid air exists. The hygroscopic humectants in Hydretain are not powerful enough to reach out of ground and draw water back into the soil. They are; however, strong enough to grab water molecules from the humid air in soil pore space before that moisture is lost to evaporation.

Pore Space in the Soil

Porosity is an important factor to soil health. Pore spaces between soil particles facilitate the water, air and nutrient exchanges that plants need to thrive. During irrigation or rainfall, those pore spaces fill with water, creating the opportunity for plant roots to take a drink. As soils begin to dry down, air reenters the pore space and water molecules separate to form moisture vapor or humidity. Just as we can't drink from the humidity in the air around us, plants can't utilize this moisture either, and eventually it is lost to evaporation.

That's where Hydretain comes in. Once Hydretain is applied and watered into the soil, it adheres to plant roots and soil particles. As soils dry and water molecules separate in the process of evaporation, Hydretain attracts those molecules to itself, pulling them back together to reform plant usable droplets – similar to seeing condensation form on a cold glass. This process extends water availability to plants, minimizing moisture stress and reducing the need for frequent irrigation.



Back to the Desert…

Hydretain's performance is based on the availability of soil moisture vapor, not atmospheric humidity. Even in extremely arid climates, soil moisture can be very high depending on watering practices. With proper watering practices, Hydretain's performance in Phoenix, AZ can be as efficient as it is in Miami, FL.

Hydretain
ROOT ZONE MOISTURE MANAGER

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Tips for Success

- **Watering Hydretain Into the Soil**
  Hydretain must be watered into the soil in order to function properly. In arid climates, water evaporates more quickly than humid ones. When using liquid Hydretain, the product should be watered-in immediately following the application to ensure that Hydretain reaches the root zone rather than adhering to leaf tissue or getting caught in the thatch layer. If you are unable to water right away, granular Hydretain products, which may be watered-in within 5 days, are recommended for your application.

- **Watering Practices**
  In arid climates, light and frequent waterings to cool grasses and other plants are a common practice. Unfortunately, this watering style does not provide enough soil moisture for Hydretain to be effective. With deep, infrequent watering you'll provide enough moisture into the soil profile for Hydretain to perform properly. This practice will allow you to reduce overall water use while allowing plants to receive the water they need to naturally cool themselves through transpiration.

- **Microbial Activity**
  Hydretain is biodegraded by soil microbes. Hydretain applications generally last for three (3) months, however, areas with higher than average microbial activity may experience a shorter duration. In these areas, booster applications at a 1/3 rate monthly for liquid products or 1/2 rate every six weeks for granular products are recommended to improve product performance.

- **Hydrophobic Soils**
  Hydretain contains 10% non-ionic surfactant to improve its penetration into hard-to-wet soils; however, areas with poor quality irrigation water, or soils prone to hydrophobic development may experience a decline in results over time due to poor water infiltration through the top surface. When this occurs, wetting agents or soil remediation products are recommended to improve water infiltration and allow Hydretain to function properly for up to three months.

For additional information or specific application questions, please contact our agronomic experts.

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Visit hydretain.com for more information.

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