



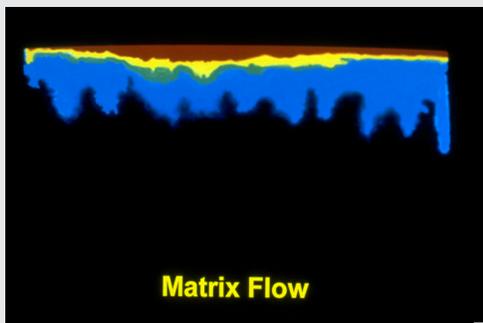
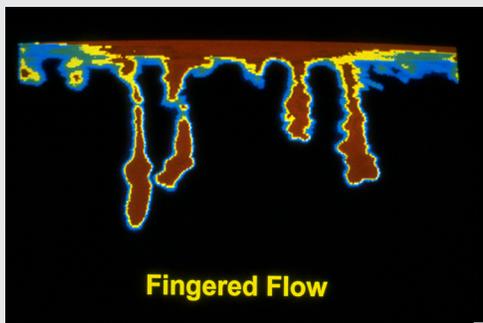
# Prevent Water Repellency Promote Turf Uniformity



## What is Primer® Select?

Primer Select is a high-performance soil surfactant that is the foundation of an effective rootzone management program. It enhances turfgrass uniformity by establishing matrix flow in the rootzone, thus increasing water use efficiency in treated areas of highly managed turf. Based on the original Primer chemistry, this improved formulation allows you to adjust the application rate and frequency to more closely match your soil type and spray program needs. Primer Select is safe throughout the entire growing season for all turf species, and in all climates.

Water naturally follows the path of least resistance, leading to channeling or “fingered flow”. If water does not move uniformly through the soil profile, it becomes more prone to developing water repellency. Primer Select establishes “matrix flow” – the uniform downward and lateral flow of water and/or solutes in soil profiles. By establishing matrix flow, Primer Select creates a uniform wetting front to prevent the development of water repellent conditions. The overall result of Primer Select use is effective rootzone management, the foundation for healthy, attractive, uniform turf, and a manageable maintenance budget.



### The Benefits of Matrix Flow

Untreated soils do not wet uniformly, but rather follow a path of least resistance (top). Fingered flow occurs when the wetting front becomes unstable as water infiltrates. The front breaks into “fingers” causing only a small portion of the soil mass to become wet, while the majority of the rootzone remains dry. These “fingers” act like funnels directing and accelerating the flow of water and aqueous turf production chemicals below the rootzone. This results in a lack of uniform wetting of the rootzone, improper placement of turf production chemicals, and increased potential for leaching.

Under both laboratory (bottom) and field conditions, Primer Select was found to establish and maintain matrix flow, a uniform downward and lateral flow of water into the rootzone. Primer Select increases receptivity to applied water, produces uniform moisture and distribution of turf management chemicals, and dramatically reduces fingered flow and its associated problems of dry spots, wet spots and uneven wetting.

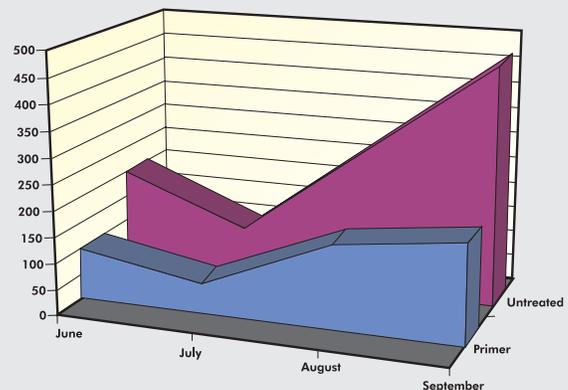
## Move Water Deeper

Water repellency doesn't just happen at the surface – it can develop deeper in the profile where you may not see the immediate effects. If water is not moving deeply into the soil neither will turf roots, leaving turf more susceptible to stress and diseases.

Primer Select combats water repellency throughout the entire rootzone, helping move water deeper into the profile where established root systems can utilize it more effectively.

### Infiltration into Water Repellent Soil (Guelph Turfgrass Institute)

Primer Select maximizes infiltration and promotes more consistent movement of water throughout the season. In trials conducted at the University of Guelph, researchers found that using Primer Select on a monthly basis improved the infiltration of water into treated soils. Primer Select shows consistently lower infiltration times compared to the untreated. When infiltration became really difficult in September, the Primer treated soils still accepted water readily.



### Comparison of Depth Performance (Georgia 2001)

When soil water repellency is reduced deeper in the soil profile, water is able to move more deeply into the rootzone. Compared to an untreated control, Primer Select significantly reduced water repellency deeper in the rootzone. Competitor "C" was effective early, but diminished throughout the study. Primer Select continued to perform deeper later in the season, enabling soils to move water deeper.

