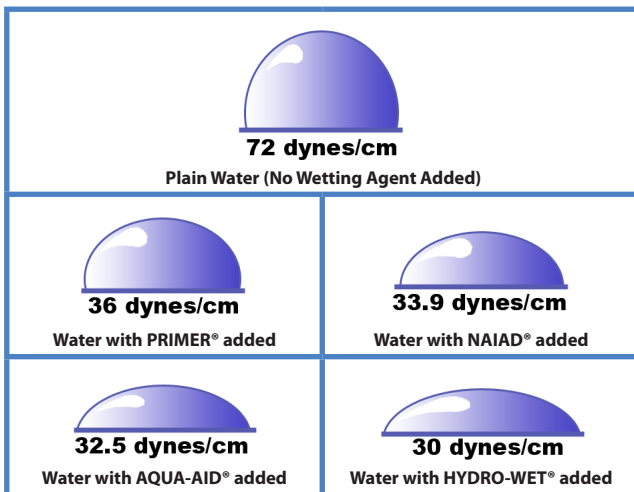


Effect of Hydro-Wet Compared to Other Products in Reducing Surface Tension



Note: The smaller the dynes/cm, the greater the water coverage and infiltration. Dilution Rate: 100:1 (Water: Wetting Agent)

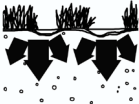
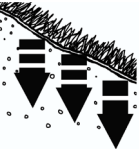

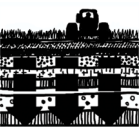
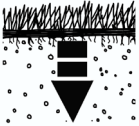
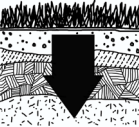
Hydro-Wet is a registered trademark of KALO, Inc. / Primer is a registered trademark of Aquatrols Corp. Naiaid is a registered trademark of Naiaid Co. / Aqua-Aid is a registered trademark of Aqua-Aid.

Understanding Water Repellent Soil and the Use of Irrigation Additives: Hydrophobic soils develop due to organic minerals, such as those found in crop residue and other soil amendments, all resulting in a water repellent organic coating formation on sand and soil particles which result in the development of water repellent soils.

Soil Profile: Organic matter has an affinity to oily substances and contributes to water repellency. Block polymer chemistry works so well as a soil wetter because each molecule is comprised of a hydrophilic (water loving) head and a hydrophobic (water repelling) tail. When applied and incorporated into the soil solution, the hydrophobic tail of the wetting agent is attracted to the hydrophobic coating on the soil particles. The tail of these molecules adhere to the water repellent organic coating, the hydrophilic head remains a readily accessible site for water to attach, driving water into the soil profile rather than forcing water to run-off the surface of the soil particle.

Surface Tension: Surface tension is reduced as water molecules push outward toward the hydrophil of surfactant. Surface tension is a condition that exists at the free surface of a solution and can be measured in terms of the amount of force required to pull a denoy ring off the surface of the solution. The force is measured and expressed as dynes per centimeter (dynes/cm).

Here is How Hydro-Wet Helps Solve Water Problems:

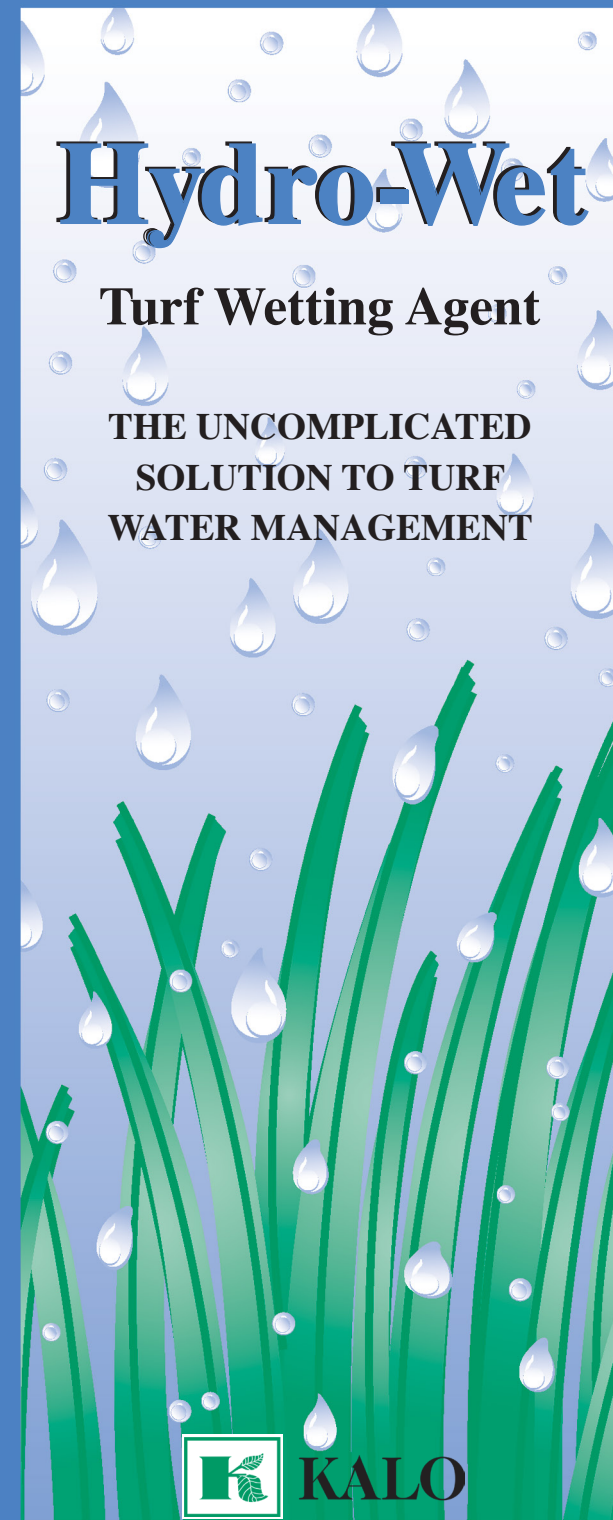
 Promotes absorption of hydrophobic soils.	Soil surfactants (also known as wetting agents and soil conditioners) enhance the infiltration and absorption of water into repellent/hydrophobic soils. Hydro-Wet can effectively alter water's infiltration and absorption properties. The use of Hydro-Wet to manage irrigation efficiency and increase plant available water is of increasing importance with today's limited water resources.
 Reduces water loss caused by runoff.	When soil is repellent, water can puddle on the soil surface. Instead of absorbing into the soil, the water will runoff. Compacted and hydrophobic soils are less able to absorb water, thus increasing runoff and erosion. Adding Hydro-Wet prevents runoff.
 Fights drought by getting water down to root zone.	Hydro-Wet is a soil surfactant, which means it conditions the soil. Hydro-Wet breaks through organic coatings around soil particles that prevent the soil particle from absorbing water. Hydro-Wet alters the soil property, making the soil more water absorbent, which enables water to penetrate deeper into the soil profile, which means getting down deeper to the root zone, thereby delivering more water and oxygen to the rootzone.
 Assists penetration and drainage of compacted soil and keeps puddles from forming.	In compacted soil, air is displaced from the pores between the soil grains. Plants have difficulty in compacted soil because the mineral grains are pressed together, leaving little space for air and water, which are essential for root growth. Puddles form on compacted soil. Adding Hydro-Wet loosens the soil to allow rapid penetration, which prevents puddles from forming, and improves the conditions of compacted soil. To improve turf quality of compacted soil, use Hydro-Wet in conjunction with soil aeration.
 Maximizes water holding capacity to reduce the occurrence of wilting.	Once plants extract all available moisture, the soil is at its permanent wilting point. Plants growing in soil that has reached its permanent wilting point will exhibit wilting and not recover due to lack of water. The water that is held by the soil between field capacity and permanent wilting point is known as the soil's water holding capacity. For effective water management, the addition of Hydro-Wet can positively influence plant available water which is that portion of the water holding capacity that can be absorbed by the plant.
 Properties of soil and soil water movement.	Learning more about the physical properties of soil and soil water movement provides useful information for irrigation scheduling and efficiency, crop selection, ground water contamination, estimating runoff, increasing plant available water and determining when plants will become stressed.



Hydro-Wet

Turf Wetting Agent

THE UNCOMPLICATED SOLUTION TO TURF WATER MANAGEMENT



GCSAA/USGA Wetting Agent Evaluation

GCSAA has completed a 2-year evaluation of selected wetting agents. The overall objective of the evaluation was to determine the effectiveness of selected wetting agents for managing localized dry spots on putting greens. The top 10 wetting agents favored by superintendents were used for the evaluation.

8-WEEK WATER DROPLET PENETRATION TEST

Mean water-droplet-penetration test results (seconds)

Core depth (centimeters)

Treatment	0.5	1.5	2.5	3.5	4.5	5.5
Aqueduct	21 e	2 f	1 e	0 e	0 c	0 d
Brilliance	117 bcd	19 c-f	6 de	2 cde	1.2 bc	0.3 cd
Cascade Plus	76 cde	16 def	6 de	3 cde	1.8 bc	0.8 bcd
Hydro-Wet	45 de	17 def	9 cde	3 cde	1.5 bc	0.5 bcd
LescoFlo	101 bcd	28 b-e	10 b-e	4 abc	1.3 bc	0.7 bcd
Naiad	143 bc	64 a	25 a	7 a	3.0 ab	1.5 b
Primer Select	150 bc	41 abc	19 abc	4 abc	1.7 bc	0.8 bcd
Respond 2	169 b	40 bcd	21 ab	5 abc	2.0 ab	1.2 bc
Surfside 37	139 bc	32 def	15 a-d	7 ab	4.0 a	1.0 bcd
TriCure	77 cde	11 ef	3 e	1 de	0.8 bc	0.3 cd
Control	277 a	45 ab	24 a	7 a	4.0 a	3.0 a

Note. Means followed by the same letter within a column are not significantly different.

These water-droplet-penetration test results (seconds) are from soil cores taken eight weeks after the initial wetting agent application.

Still unsurpassed, **Hydro-Wet**® is preferred by golf course superintendents and turf managers who want a dependable, uncomplicated solution to water infiltration problems. Water is the driving force behind supporting turf's metabolic functions and growth so it's important to get water into the soil uniformly for healthy, consistent turf performance.

From greens to goal lines to ornamentals, **Hydro-Wet** is the wetting agent of choice. Proven over the years to reduce soil repellency and to deliver enhanced soil moisture, **Hydro-Wet** gets more water where you want it to maintain quality turf and plants.

For an uncomplicated solution to maximizing efficient use of water, simply choose which convenient, easy-to-use formulations match your preferred application method.

YOUR JOB Keep greens, fairways, sports and recreational turf areas in top condition regardless of variable soil types, temperature and moisture stress. Hold down labor and irrigation costs despite rising water and manpower costs.

THE PROBLEM Irrigation water cannot uniformly penetrate hydrophobic or compacted soils or areas of heavy thatch. Slopes and uneven terrain can cause runoff or puddling. Localized dry spot, and uneven distribution of fertilizers and pesticides, could result.

THE SOLUTION Hydro-Wet from KALO simplifies water penetration problems on golf courses, athletic fields, parks and ornamentals by reducing surface tension of water in hydrophobic soils. You gain control of localized dry spot, prevent puddles, and reduce irrigation water runoff loss.

Hydro-Wet

Hydro-Wet concentrate liquid formula is perfect for use in portable tank sprayers. The long-lasting residual performance of Hydro-Wet means less frequent application, and is ideal for preventative applications in advance of drought stress to assure lush turf, improved turf quality and vigor. Residual value of our concentrated formulas can reduce irrigation needs by up to 50%, making it ideal for hard-to-wet turf areas.



Use Rate: 8 fl. oz. per 1,000 sq. ft., repeat application

Package Size: 2 x 2.5 gallon case & 30 gallon drum

Hydro-Wet Pellets

Hydro-Wet Pellets offer convenient, supplemental treatment for localized dry spot in turf areas. This pellet contains 50% Hydro-Wet for use every time you syringe or hand water turf, water-in trees, shrubs, flowers and sod. Easy to use with hose-end application systems, Hydro-Wet Pellets offer quick treatment with no additional labor costs.



Use Rate: One pellet per acre

Package Size: 30 x 4 oz. pellets per case



KALO, Inc. Overland Park, KS 66213 U.S.A.
800-255-5196 www.kalo.com
Hydro-Wet is a registered trademark of KALO, Inc.

Uncomplicated, proven, affordable. It's just common sense.