

## **WATER AIDE™**

Water Aide is an OMRI approved adjuvant/wetting agent designed to increase the efficiency of water. It reduces the effects of localized dry spots by increasing water penetration in and through the soil. Molecules on the surface of water droplets are held together with more force than those of interior water molecules. The water molecules want to cling to each other. This causes surface tension which can prevent the movement of water in the soil. Additionally, water repellency is a natural occurrence that affects all soils. Water repellency is caused by the buildup of organic coatings on the particles of soil caused by the decomposition of organic matter. This can lead to the particles of soil becoming more resistance to water and reduces its capacity to hold and retain water. Water Aide is designed to overcome these problems with surface tension and water repellency. The improvement in horizontal and vertical water movement in the soil makes water more accessible and more readily available to the plant. It improves the effectiveness of chemical and fertilizer applications in the soil with less runoff and allowing the soil to become more receptive to moisture and other applied products. This improves irrigation efficiency, saves energy, labor and reduces plant waterings.

Water Aide is an ionic water soluble polymer that contains carboxylate groups that can form extensive gel structures over a wide range of pH ranges at extremely low concentrations. When chemicals/fertilizers are added to Water Aide, their molecules are encapsulated within the larger polymer structure. Water Aide is 100% soluble and goes into solution quickly. It is effective on a wide range of soil and turf conditions. With greater water penetration in the soil, it effectively reduces water and chemical and fertilizer runoff. Water aid can be used as a spreader and sticker in chemical and pesticide applications.

Water Aide, with its unique physical characteristics, is used in numerous applications in the turf, horticultural and landscape industry. Water Aide is very universal with its attributes as an adjuvant, wetting agent, spreader, sticker and drift retardant. The soluble polymer is effective over a wide variety of environmental conditions and wide temperature fluctuations. It is compatible with most chemicals.

### **BENEFITS**

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- . Increases water efficiency
- . Increases water penetration and movement of water
- . Reduces plant waterings, improves irrigation efficiency
- . Reduces water and chemical runoff
- . OMRI approved
- . Multi-functional adjuvant product for several types of applications

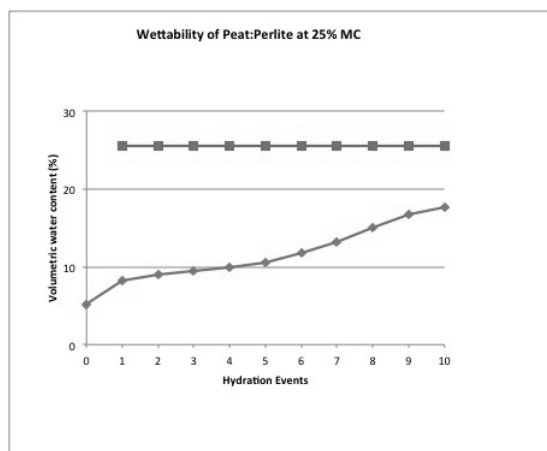
### **AMENDING SUBSTRATES**

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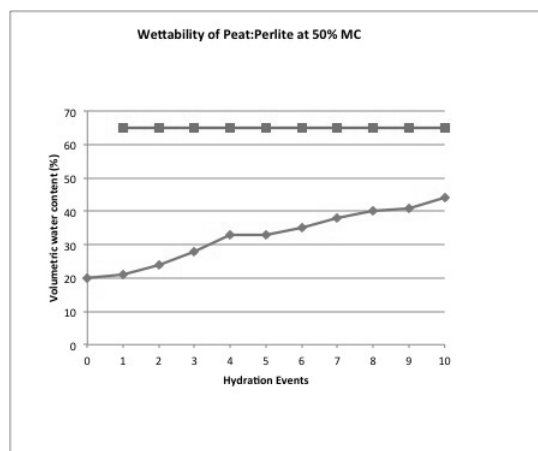
One of the most traditional substrates in the greenhouse market is sphagnum peat moss amended (generally 20% by volume) with perlite. The hydrophobic nature of peat moss, especially under dry conditions possesses challenges to the commercial grower. When a traditional mix is below 50% moisture content, most will not wet up to full capacity even after 10 irrigation events or more. Under these dry conditions water will just channel down the sides of the containers (preferential flow) and subsequent irrigations will follow these same channels. Even at a 50% moisture content, materials such as peat are difficult to wet even with the addition of a wetting agent.

## TESTS

To illustrate the difficulty of hydrating substrates in the greenhouse industry, tests at North Carolina State University were performed with and without Water Aide at various moisture levels in the substrate. The substrate used for the tests were 80% sphagnum peat amended with (20%) perlite.

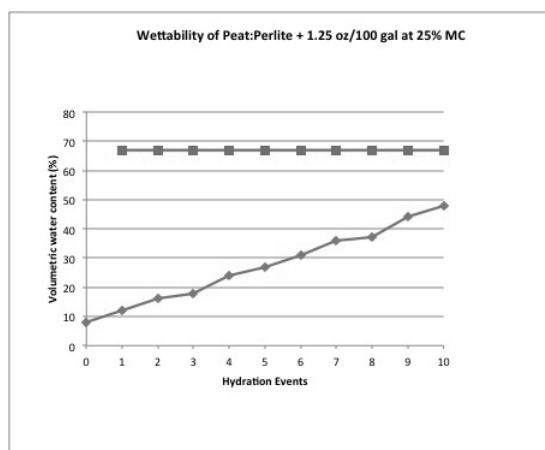


**Control, 25% moisture**

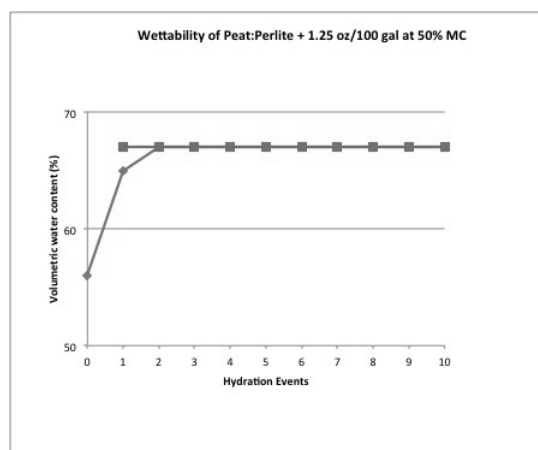


**Control, 50% moisture**

The control tests used water only. With the substrate at 25%, the volumetric water content (%) only increased from 5.0% to 18.5% after 10 irrigations. At 50%, the volumetric water content (%) increased from 20.0 % to 42.0% after 10 irrigations.



**Water Aide, 25% moisture**



**Water Aide, 50% moisture**

1.25 ounces of Water Aide was mixed with 100 gallons of water. With the substrate at 25%, the volumetric water content (%) increased from 9.0% to 49.5% after 10 irrigations. This represents an increase by more than 167% compared to the control after 10 irrigations. When tested with the substrate at 50%, the treated water reached moisture capacity after 2 irrigations. The control at 50% moisture only reached 23% volumetric content after 2 irrigations. This represents an increase by more than 195% with the treated water.



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