

GROWERTALKS

Paul's Pointers

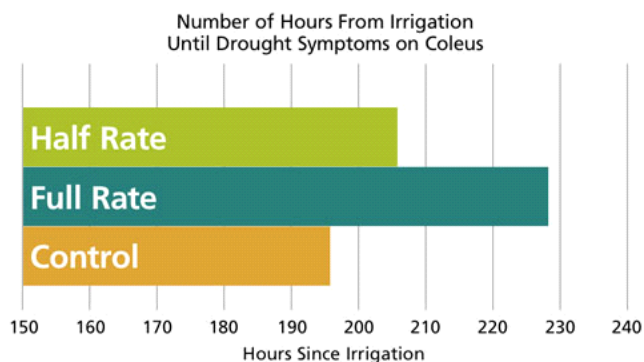
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Wetter Water

Paul Pilon

If you're reading this, you're likely a grower, have been one in the past or currently work with growers in some capacity. I think there's no argument about the important role water plays in a plant's ability to survive and thrive. Yet water seems to be one of the most taken-for-granted aspects of production many growers have.

I can't tell you how many times I've seen growers over-irrigating their crops. I estimate across the industry that the average grower is applying at least 50%, but likely closer to 100%, more water than is necessary to grow a healthy crop. Water is plentiful and cheap for some growers, but costly and very limited for others. Regardless, why would any grower want to apply more water than is necessary?



Pictured: In this wetting agent trial, the duration until drought symptoms appeared are shown when a half rate and full rate of wetting agent are applied to coleus. The chart shows the number of hours from the previous irrigation until the plants were beginning to wilt. It took 5.2% longer for drought symptoms to appear with a half rate of wetting agent and 16.6% longer when a full rate was used. That's over one day longer with the full rate. This demonstrates how the interval between water events can be increased when wetting agents are used. FYI—I typically see around a 20% increase in the time

for drought symptoms to appear when using wetting agents.

When thinking about the importance of water and the challenges many growers face with water management on a daily basis, and how drought or other factors can affect the supply of water over time, I'm reminded about readily available and highly effective tools growers can and should be using to improve their irrigation practices and conserve their water supplies.

The tools I'm referring to are wetting agents. Wetting agents, also known as soil surfactants, are chemical compounds used to lower the surface tension of water, allowing water to penetrate and spread throughout the growing media. Wetting agents not only decrease channeling and improve distribution of water during and shortly after irrigation events, but they also effectively increase the water-holding ability and the amount of time between waterings. Wetting agents allow the growing mix to reach its full water-holding potential.

I've personally conducted several wetting agent trials over the past several years and here's a summary of what I typically see in these trials:

1) Wetting agents only slightly improve the water-holding ability of the growing mix. I typically see a 2% to 5% increase by weight when using wetting agents. This may seem surprising, but I've never experienced higher increases than these.

2) Crops treated with wetting agents take longer to dry down than crops without them. The duration varies by the type and size of the plant, with the environmental conditions, and the type and rate of wetting agents being used.

3) The amount of water to grow crops can be reduced by 25% to 40% when wetting agents are applied. This reduction occurs by the faster rewetting during irrigation events and by the increased interval between irrigations (wetting agents help mixes hold water longer).

These are some pretty compelling reasons to use wetting agents. Still not convinced? Please allow me to continue.

Wetting agents not only allow water to be distributed evenly, but they also help to prevent over-saturation and increase air-to-water ratios in the root zone. This is the most common misunderstanding growers have about wetting agents. After the substrates reach their capacity, wetting agents also help to improve drainage and increase the amount of air that's in the root zone at container capacity. Wetting agents do NOT decrease air space or cause saturated conditions; the physical properties of the growing mix do that.

How and when to use wetting agents

- If you're using a peat-based growing mix, it likely already contains a wetting agent. However, many bark-based growing mixes do not contain wetting agents and would benefit from adding them prior to planting.
- Most wetting agents will provide the benefits mentioned above for around eight weeks. If you're growing short-term crops (eight weeks or less), there's likely no need to apply additional wetting agents.
- Wetting agents can be applied to long-term crops (those taking eight weeks or longer to produce) to retain the benefits they offer. Consider applying wetting agents six or eight weeks after a long-term crop is started.
- It's highly beneficial to apply wetting agents to crops that have been overwintered. This helps to alleviate much of the moisture variability that occurs from pot to pot when the plants resume growing in the spring.
- If you're like me, you have several overwintered crops, short-term and long-term crops being produced simultaneously in the spring. Once the initial wetting agent charge is provided to the new plantings and carry-over crops, I find it beneficial to inject a low concentration of wetting agents into the irrigation water to ensure the benefits of the wetting agents are sustained over time.
- If you're on the fence about using wetting agents in the early spring or into the fall fearing that the crops may stay wet during the extended periods of cloudy weather, but still want to reap the benefits, consider applying wetting agents using low rates continuously from mid-April through mid-August or so. This way, you'll use less water during the warmest months of the year.
- You won't realize a reduction in watering if you don't change your watering habits. For example, if you have the irrigation set on timers to run every day for 30 minutes before the use of wetting agents, and you keep watering for 30 minutes every day when using them, of course there won't be a reduction in the amount of water applied to the crops. If you don't think you can water every other day, consider decreasing the irrigation times by 10% increments until the containers don't get fully wet following the irrigation.

I'm not an advocate for using wetting agents because I heard a good sales pitch or because I needed to conserve

water. I use them because they are powerful tools that help me be a better grower and they help me grow high-quality crops. One of my colleagues uses the phrase “wetter water” when they discuss the characteristics and benefits of wetting agents. I think “wetter water” sums it up perfectly. **GT**

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