

1. How do I recharge the TreeDiaper® Advanced Hydration System?

The best way to charge them is by rainfall and snowfall. Recharge it in bucket. Or placing them in field 2 months before rainy season is over.

2. How do I refill/recharge the TreeDiaper?

The best way to charge them is naturally by rainfall and snowfall. However, in regions that are extremely dry (less than ½" of rain per month), we recommend using it with drip irrigation. The TreeDiaper will greatly enhance the effectiveness of the drip system and require less water.

If drip irrigation is not an option, here are two options:

- a) When managing many trees where you want to recharge the TreeDiaper, remove them to recharge overnight in a bucket. Replace them at the tree location the next day. They will be sufficiently charged for weeks or months.
- b) Or water each tree for 2 minutes per day for a week. Maintenance of the TreeDiaper versus a traditional tree watering bag involves checking soil moisture rather just using lots of water to refill. Normal watering or traditional tree bags have a lot of water that ends up being evaporated or not used efficiently to water the tree.

3. How often should I water TreeDiaper® Advanced Hydration System?

Depending on evaporation rate, temperature and humidity in your region. In tests in central Virginia, the TreeDiapers were never watered for four years, including several seasonal drought conditions but kept soil moisture conditions high enough for the trees to thrive. *If your region has much less precipitation, we recommend checking every two weeks, but probably only need water once every month if there is less than one inch of rain.*

4. What should I do with TreeDiaper® Advanced Hydration System after growing season or when it freezes outside?

You can leave them outdoor. Do not take them inside or under shelter. The rainy/snow season in many part of North America will help to get them charged and prepared for spring time. They are fine in cold winter weather. Freezing and thawing won't cause any damage.

5. How should I treat leaked pellets?

Mix it up with soil. They are agricultural grade and will do no harm to the environment.

6. On hot and sunny summer days, will the TreeDiaper® cook my tree?

Unlike watering bags, they are buried under mulch and not exposed to sunlight. Therefore, it will not heat up much. Actually, it serves as a heat sink for tree root system so to prevent root system damage. Similarly, it protects tree roots in harsh winter days.

7. What is the water release rate?

It depends on the temperature, humidity, wind, mulching or not and many factors. In our laboratory tests, it lasted 45 days before they became dry. In one field test in Chesterfield County Virginia, it served the trees very well for the month of August 2016, when there was only half inch of rain.

8. The amount of water does not seem enough for newly planted trees. How can I ensure trees receive enough water, especially for the first month after being transplanted?

The conventional methods of watering trees (including using watering bags) does not account for runoff water, evaporations and competition of other plant life in the surrounding area. Also, the method of dumping water on the root ball makes the growing condition like those in a container and in a nursery. Trees are not encouraged to grow roots outward into the surrounding environment to find water. It absorbs more water than it needs, which does not help its long-term chances of remaining healthy and irrigated. TreeDiaper™ Advanced Hydration System reduces runoff, reduces evaporation, eliminates competition, and encourages outward root growth. With all these features combined, we found trees find enough water to survive seasonal droughts without watering or very little watering

9. Can I apply fertilizers on top of TreeDiaper® Advanced Hydration System?

It depends on the type of fertilizers. Burying fertilizers in soil under TreeDiaper® products is highly recommended and it will cause less pollution and runoff. It is better to know what ingredients in the fertilizer you are using. Most organic fertilizers are fine. Here are some individual fertilizers that may be considered:

- N: Urea (the largest agricultural nitrogen fertilizer) such as Ammonium and Ammonium Nitrate are fine.
- P: mono-ammonium phosphate, di-ammonium phosphate and ammonium phosphate. At high concentration, it may temporarily reduce water holding capacity. But it can be recovered rather quickly.
- K: Potassium Chloride, Potassium Sulfate, and Potassium Nitrate. At high concentration, it may temporarily reduce water holding capacity. But it can be recovered rather quickly.
- Try to avoid fertilizers or additives containing metal irons other than Group I (Alkali Metals) such as Aluminum, Iron, Calcium, Magnesium, which are common in many mixed type fertilizers.

10. I used hydrogels before for my trees, it did not show any difference. Since you use hydrogels for watering holding and slow release purposes, how is it different?

The biggest difference between the conventional method of using hydrogels and TreeDiaper® is in the stormwater/irrigation water runoff reduction. Conventionally, hydrogels are used by mixing in soil. For surface irrigation methods and natural precipitation, water must penetrate to a certain depth of soil before it reaches the hydrogel particles, which means it does not reduce runoff.

Hydrogels in soil only increases soil moisture content when there is enough watering, which defeats the purpose of using hydrogels. Hydrogels in soil do not reduce evaporation, do not eliminate competition, and sometimes it competes with plant for moisture, like desiccants.

TreeDiaper™ Advanced Hydration System uses hydrogels to catch, store and slowly release back water to root system. It does not compete with root for moisture. Instead, it releases water into soil and then plant roots get it from soil.

11. My city uses watering bags for our city trees, but we do not have enough labor to fulfill the required refilling of those bags. Can we solely rely on rainwater and not water them?

It depends on how much rainfall TreeDiaper® can be charged in your region. We never watered them in central Virginia area for four years, including several seasonal drought conditions. If your region has much less precipitation, we recommend checking every two weeks, but probably only need to be watered once every month if there is less than one inch of rain. You don't have to water trees as often like traditional watering bags required, a huge difference in labor, water usage and cost.