

From the garden

The weight of water

It is amazing how a piece of information can alter the way you look at the world.

In this particular instance, it was a little warning decal on the side of a utility trailer that stated the maximum allowed weight of just over 1,500 lbs. In the space under the warning there was an added line which said, in part, for transporting water 1 gallon=8.33 lbs.

I was flabbergasted! (Couldn't wait to use that word in a sentence.) And that was an American gallon. The Imperial gallon weighs 10 lbs. by definition. Did you know that? It is a remarkable.

Water has been a topic in many conversations a lot this year as parts of our country deal with extreme flooding and extreme drought. The 'weighty' discussions around water, climate change and apocalyptic events didn't once actually touch on how heavy water was. But ever since reading the label, I thought it would be an interesting way to address plants and their relationship with that precious commodity—H₂O.

**Story and photos
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A number of years ago I read an article about the seasonal flooding in a part of England that was known for droughts. The gardener interviewed took great pains to explain that her plants could tolerate the two feet of water over their heads for a couple of weeks, but no more and that was only because they were dormant.



Dormancy in plants is really important for us to understand here in Halton Hills. In plant terms, dormancy is a phase of minimal activity due to stressful conditions. Most perennial plants go 'dormant' for the winter to deal with the cold and lower light conditions. Ornamental grasses do the same. Lawn grass can also go dormant in the summer when it gets too dry and hot, and then it springs back to life after adequate rain or cooler fall temperatures.

So, back to flooding. If the plant is dormant it can stand a bit of flooding. That is because the roots are not actively breathing (respiration). In essence it is like they are holding their breath under the water. But if they are in growing



'Fiddlehead' fern

phase, they can literally drown as the oxygen level in the soil decreases with the water.

One of the biggest problems with our February thaw is that plants 'break dormancy' too soon and start active growth. Then, if the soil is over-burdened with spring rains and snowmelt, the plants drown. It is one of the most common reasons we lose perennials in this zone and by the way, the reason many people lose cactus plants. They are often watering the plants when they are dormant and drowning them.

Another problem with floodwater is erosion. Now that you and I know the weight of water, it is easier to understand how the weight plus the rapid movement of floodwater moves earth and rock, along with bridges, homes and everything else in the path.

For plants it can be either a problem of the soil being washed away exposing the roots (watch out that you don't do this when watering with a garden hose!) or excess soil, mulch, or debris burying the roots too deeply. You should look out for this problem with your peonies. Herbaceous peonies are very particular about how much soil, mulch or debris is over the eyes of the tuber. If too much, they will stop flowering.

As a matter of interest, excess soil on shrub and tree roots can also cause problems accord-



Water droplets sit atop a hosta sieboldiana 'Elegans'

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