

Horticultural Moment - Raining Acorns!

What's up with acorns this year? They are everywhere, bouncing off cars and heads (!!), twisting ankles, and keeping us awake at night.

2019 is a **mast year**. "Mast" is the fruit plants produce (like acorns) that wildlife uses for food. This past spring, multiple species of trees and shrubs over a large area flowered *en masse* to produce a bumper crop of fruit, nuts, and seeds this fall. But, oak trees produce more nuts (acorns) than all the region's other natural and cultivated trees combined. In a boom year like this, a mast year, one huge oak can drop up to 10,000 acorns. In a bust year, it produces hardly any.

Why, or how, this happens is "one of the great mysteries of science", according to Mass Audubon. Rainfall and temperatures have some effect on production, but weather is not a deciding factor in the simultaneous abundance of acorns (plus other fruits and nuts) in a mast year. And, no, it does not predict a bad winter, as the Old Wives' tale would have us believe. There are many theories, but we really don't know the answers.

What we do know is that a mast year is part of the evolution of trees and shrubs. Acorns are such a valuable food source to animals and birds that 98% of those that fall to the ground are eaten and never sprout. In a bust year, there are fewer acorns to satisfy the high protein diet needed by creatures to survive winter, to thrive and to reproduce. Chipmunks, squirrels, turkeys, deer, bear, and even blue jays suffer and populations decrease. In a mast year, like this one, there are more acorns than the remaining critters can eat, so acorns sprout and grow into oak seedlings. Two years later, there will be many tiny oak trees, all the same size, about 1' tall.

This process only works, however, if all nut and fruit bearing trees "starve" their predators at the same time across a large geographic area, and then all produce abundant mast at the same irregular intervals. Somehow, trees are "synchronized". Somehow, trees communicate through chemical signals, or perhaps underground through roots and fungal connections, or perhaps by weather cues, sometimes over hundreds, or thousands, of miles. This is also a super-efficient way to spread huge amounts of pollen by wind to all those flowers blooming at once.

Nature is amazing at regulating herself, but there are ecological consequences. The bad news is that more acorns mean more white-footed mice (5/6 babies per month per female!). This leads to more ticks and possibly more Lyme disease next spring. The good news is that white-footed mice eat Gypsy moths, and they make a delicious meal for their predators.

Trees put all their energy into production in a mast year. After that, they recover by using their energy to grow and will produce very few acorns. So, pretty soon you can put your hard hats away for the next 2 to 5 years, and finally get a good night's sleep again.

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