

APPLYING FERTILIZER ON NANTUCKET

Lee W. Saperstein, Secretary of the Article 68 Work Group

Give the plants what they need, when they need it, no more and no less, no sooner and no later.

Avoiding excessive application of fertilizer on Nantucket will be a significant contribution to the health of our Island's waters: harbors, great ponds, the myriad of lesser ponds, and groundwater. We know that the quality of our waters is good but that levels of nitrate and phosphate are close to the threshold where small increases in their concentration could lead to detrimental impacts. Just as these compounds help valuable plants: turf, ornamentals, and garden plants, to grow, they also stimulate the growth of unwanted toxins in our waters: harmful, even toxic, algal blooms. Recent news articles and photographs of red and blue "tides" help us to understand that the problem is real.

The very real possibility of closed beaches and shellfish beds led Nantucket to consider controls on the application of fertilizer. Under discussion for many years beforehand, the Town voted at its Annual Town Meeting in April of 2010 to approve the concept of fertilizer control and asked that a Work Group be assembled to work out specific requirements for this control. The Work Group was named, prosaically, for the Warrant Article number that created them: "The Article 68 Work Group." In 2012, after extensive research (including substantial input that we had – for free – from expert consultants and other jurisdictions), the Work Group made recommendations for Board of Health regulations that were augmented by a substantial "Best Management Practices for the Application of Fertilizer on Nantucket" manual (BMP); to review the BMP, click <http://www.nantucketlandcouncil.org/Reports/fertilizerbestpractices.pdf>. The Board of Selectmen accepted the Work Group's report and asked the Board of Health to review the suggested regulations. This they did and the approved regulations can be found as Local Regulation 75 of the Board of Health, <http://www.nantucket-ma.gov/documentcenter/view/649>.

Although fertilizer is not the greatest contributor of nitrate into our waters, it is the one that we can most easily and rapidly control. Nitrate from high-temperature combustion (cars and power plants) is first, poorly functioning septic systems is second, while fertilizer is third, and fecal matter from avian wildlife ("bird poop") is fourth. A major part of the phosphate that goes into our waters comes from fertilizer.

It may help in understanding the rules for applying fertilizer if we spend a sentence or two on common definitions and usage. Fertilizer is a mixture of chemical compounds that provide plant nutrients, nitrogen, N, phosphorus, P, and potassium, K, in defined quantities. It may be derived from organic sources as well as various inorganic and synthetic sources. Compost is one form of organic fertilizer. As far as the quality of our waters is concerned, there is no difference in the source of the fertilizer; the negative impact is from excessive application of any form of fertilizer including compost. Other amendments that may be applied to turf and garden beds include calcium, Ca, and magnesium, Mg, in the form of dolomitic lime and various minor elements such as iron.

Compost, as mentioned, is a fertilizer. It is also an important source of organic material that can help condition a soil to retain moisture for use by plants. Because animal-derived composts, such as manures and shellfish refuse, are high in phosphate, the Work Group recommends that

grass and leaf-litter composts be used preferentially on Nantucket. Frequent grass mowing with a mulching mower can, in a matter of a few years, make a lawn self-sustaining with respect to its nutrient demand.

In considering why Nantucket is different with respect to fertilizer use we need to consider its native soils. Much of the Island is made up of undifferentiated sands and pebbles. Unlike good topsoil on the mainland, the coarse nature of our soils allows water and dissolved substances such as excess fertilizer to migrate quickly to the ponds, the harbor, and the surrounding seas. There is little to no silt and clay in our soils to adsorb the water and hold it against the roots of the plants. Where topsoil has been imported, this statement is less true. That is why the Work Group strongly recommends soil tests to determine the exact nature of the soil in your personal lawn or garden.

Click Fertilizer Application Tips in the drop down menu to read a two-page homeowners' educational brochure that is a synopsis of the much longer discussion in the BMP, which provides for flexibility in interpreting the rules for those landscapers who demonstrate an understanding of the principles embodied in it. In brief, the following threshold rules will work for anyone who applies fertilizer and doesn't wish to absorb the entire 65 pages of the BMP.

- Apply no more than 3.0 pounds of nitrogen per 1000 square feet of lawn per growing season.
- Apply no more than 0.5 pounds per application with no more than 0.25 pounds per application being quick-release fertilizer
- Do not apply fertilizer more frequently than two weeks apart.
- Do not apply fertilizer before April 15th and after October 15th – temperatures outside of those dates are too cool for turf growth meaning that applied fertilizer will go directly into our waters.
- Do not apply phosphate unless called for by a soil test.
- Respect the boundaries around water resource areas in which fertilizer application is restricted.
- Consider using Nantucket friendly and native species that, on the whole, require less fertilization.

