

Phosphorous Fertilizer Bans Are Ignoring Science

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Bans on lawn fertilizer containing phosphorous are being considered in several communities in the Upper Midwest, with some new bans already approved and taking effect in January 2008. The proposed bans are in response to excessive plant and algae growth in some ponds, streams, and lakes.

However, studies conducted by scientists at the University of Wisconsin indicate phosphorous bans will actually make the problem worse.

Keeps Lawns Healthy

Phosphorous is one of three key ingredients essential for thick and healthy lawns. As lawns use up natural phosphorous in the soil, replenishing it is essential to prevent deterioration. However, aquatic plants, such as algae, also benefit from phosphorous. Elevated phosphorous levels are frequently blamed for problematic aquatic algae blooms.

Bay County, Michigan, County Board Chair Kim Coonan is spearheading a proposed ban that is typical of what is being proposed in various communities. In response to algae growth in Saginaw Bay, Coonan rightly observed in the September 19 *Bay City Times*, "I think we all agree that phosphorous is something we need to address."

Reduces Phosphorous Runoff

At first blush, it would seem logical that banning phosphorous in lawn fertilizer would reduce phosphorous runoff into streams, ponds, and other bodies of water. However, several years of research from soil scientists at the University of Wisconsin have revealed just the opposite.

Professor Wayne Kussow is the leader of soil runoff tests at a specially constructed turfgrass research facility at the University of Wisconsin. In a study conducted over six years, Kussow documented lawns treated with phosphorous-containing fertilizers

produced less phosphorous runoff than those where no phosphorous was applied. The reason phosphorous application reduces runoff of the element is that adequate soil phosphorous levels keep lawns thicker and healthier. Thick, healthy lawns absorb more water than thinner lawns, and therefore experience less water and soil runoff. While soil effectively captures the vast majority of phosphorous fertilizer added to lawns, the enhanced rainwater runoff in thinner lawns transports more "natural" phosphorous from decaying vegetation and existing soils into nearby bodies of water. So, paradoxically, phosphorous fertilization actually reduces the amount of phosphorous runoff.

Good for Nature

"On average, [water] run-off was 78 percent greater from the unfertilized plots than from the fertilized plots. The contrast in amount of P [phosphorous] in the run-off water was even greater. Not applying fertilizer increased run-off loss of P by 147 percent," noted Kussow.

His report continued, "The reason why not fertilizing the lawn so dramatically increased run-off was that the grass thinned out so badly that the rate of water flow across the soil surface is increased, thereby allowing less time for infiltration into the soil and more run-off occurred."

"This is another example where uninformed do-gooders propose so-called common-sense solutions to perceived environmental problems that end up making the problem worse," said Jay Lehr, Ph.D., science director for The Heartland Institute. "Sound science rather than emotion and knee-jerk chemophobia should govern the scientific resolution of environmental concerns such as aquatic phosphorous."

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