



New fertilizer laws call for enhanced efficiency

Editor's note: This article was submitted by Agrium Advanced Technologies; it discusses how a complex web of legislation is affecting residential and commercial fertilizer applications across the US.

ONE OF THE MOST SENSITIVE ISSUES facing the turfgrass industry today is the movement to limit the use of fertilizers—or in extreme cases, to ban them altogether.

Led by environmental activists at a number of levels, there is growing concern about environmental contamination from fertilizers in both residential and commercial settings. As a result, many states are moving to enact legislation which would restrict or prohibit fertilizer applications.

In April 2011, the state of Maryland passed new laws that affect numerous aspects of turf and ornamental fertilization, including product usage, ingredients, labeling and more.

This year, the New Jersey legislature ratified a bill which is being called the toughest fertilizer law ever. This law is being hailed by some proponents as a landmark, and is being closely observed by activists in nearby states who want to push for similar legislation.

In Florida, there is intense disagreement about who has the legal authority to impose fertilizer bans or restrictions. Dozens of individual counties and municipalities across the state have already crafted their own laws to determine how, when and where fertilizers may be used.

“LOGISTICAL NIGHTMARE”

“The debate is generating a lot of emotion on both sides of the argument,” said Sarah Fox, Sustainability Initiatives specialist, Agrium Advanced Technologies (AAT). “Aside from personal feelings, having different laws from county to county in any state would be a financial and logistical nightmare.”

On the other hand, many people around Florida believe that broad-based statewide laws cannot properly address their unique local concerns and specific regional challenges. In fact, some counties are pushing to get “emergency” anti-fertilizer laws onto their books before the state rules take effect.

“It’s all very complicated, and I don’t see it getting any less complicated in the near future,” said Alan Blaylock, agronomy manager, AAT. “Policy makers are reacting to the fears of their constituents and interest groups with what seems like a logical solution. But part of the problem is these responses are often made without an understanding of the science of nutrient management and its consequences.”

WHAT’S BEHIND THE LEGISLATION?

Why are so many lawmakers suddenly jumping on the anti-fertilizer bandwagon? The crux of the issue is fertilizer runoff, which can often be traced to improper application, especially of traditional, quick-release products.

Unused plant nutrients may migrate through the soil for several reasons. Once that happens, they are considered pollutants. Water and gravity naturally deposit those escaped fertilizer elements in nearby ponds, lakes and streams, contributing to a problem known as eutrophication. Eutrophication occurs when excess nitrogen and phosphorus get into the water. They nourish the aquatic plants and other organisms there, especially algae.

“When people see algal blooms in their neighborhood pond or local body of water, they call their homeowners’ association and want something done to clean it up,” said

Blaylock. “That gets various agencies and interest groups involved, and it can become a political battleground. Of course, everyone wants clean water, but these problems can be prevented with proper fertilizer use.”

IDENTIFYING THE CAUSES

Many people feel that a rise in eutrophication and algal blooms can be attributed to a cumulative effect of both “point” and “non-point” polluting sources. A point source refers to a single polluter, such as a factory or a mine. Non-point sources are widespread and individually unidentifiable.

In the case of fertilizer misuse and runoff, there may literally be millions of non-point contributors. Fingers are specifically being pointed at the improper use of fertilizers by homeowners and other non-professional applicators.

State and local laws regulating fertilizer usage are evidence of concern about the potential for fertilizer misuse among non-professionals, and many of the new restrictions are based on common-sense considerations. For example, some laws prohibit fertilizers from being applied on frozen ground or near pavement, or right before heavy rain. Other laws require a fertilizer-free buffer zone between landscapes and water sources, such as streams or canals. Some states have “black out” periods when fertilizers cannot be applied at all.

“The legislative efforts are usually focused on homeowners and lawn care operators,” said Fox. “Some homeowners don’t realize the impact their fertilizer application could have on surrounding water bodies. They apply a bag of fertilizer without really thinking about it, and many believe that if some fertilizer is good, then more is even better.”

Many industry professionals are exempt from certain fertilizer laws in their respective states. Legislation often makes exceptions for golf courses, sports/municipal facilities, agricultural uses and qualified landscape situations, frequently with a stipulation that the users have been trained and certified in proper fertilizer handling and application.

“They (the activists and legislators) understand that golf course superintendents, sports turf managers and lawn care professionals have a science-based knowledge of

fertilizer,” added Fox. “They know that skilled experts in turfgrass and commercial landscape maintenance are conscientious stewards of the environment.”

ENHANCED-EFFICIENCY FERTILIZERS

The dangers and repercussions of fertilizer misuse exist on different levels, some of which cannot be fixed with rules. For one thing, many of the laws are essentially unenforceable. If a homeowner is going to over-apply fertilizer, either intentionally or accidentally, what can be done to prevent it?

“That’s definitely part of the problem,” said Fox. “Local municipalities don’t necessarily have the resources to actively police the laws. That’s why manufacturers, blenders, retailers and university Extension services realize it’s up to the industry to get people to comply.”

One tremendous step forward is the increased recognition of enhanced-efficiency fertilizers (EEFs) as useful tools, particularly slow-release or controlled-release products.

The Association of American Plant Food Control Officials (AAPFCO) defines EEFs as fertilizers that increase nutrient availability/uptake and decrease losses to the environment, when compared to appropriate traditional fertilizers.

EEFs encapsulate granular nitrogen and other nutrients within special polymer coatings. When applied to turfgrass, the coated granules release nutrients gradually and evenly over an extended period.

Meanwhile, traditional soluble fertilizers dissolve into the soil quickly. When plants can’t readily absorb those nutrients, the potential increases for them to be lost from the soil (and sometimes into surface and groundwater).

“Nitrogen in the soil is very mobile, which is important for plants to be able to rapidly take up what they need,” explained Blaylock. “Healthy roots are aggressive feeders. Actively growing turfgrass consumes nutrients quickly, so the trick is to synch the nutrient supply to the plant demand.”

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That's what slow- and controlled-release fertilizers do. When you feed grass steadily and constantly—as the roots need it—the fertilizer doesn't have a chance to get lost."

By gradually delivering nitrogen and other nutrients to correspond to plants' uptake, slow- and controlled-release fertilizers can virtually eliminate nutrient loss. Steady feeding minimizes surge growth and reduces the number of fertilizer applications needed during a season.

The advantages and benefits of EEFs are becoming an important part of the new legislative trends. As industry experts, scientists, stakeholders and policy makers look for ways to alleviate nitrogen runoff, EEFs are tested alternatives that can be a significant part of the solution.

BEST MANAGEMENT PRACTICES

Fertilizer advocates and industry leaders have adopted the "4R Nutrient Stewardship," a science-based approach to best management practices. The 4R system calls for the Right Product to be applied at the Right Rate, Right Time and Right Place. When those criteria are met, plants should thrive and fertilizer should stay where it's intended to be.

"Proper use of plant nutrients can actually improve water quality, while banning them could have the opposite effect," said Blaylock. "Properly fertilized plants are healthier, so they're better able to utilize the nutrients in the soil and protect the soil from degradation. Unhealthy plants

have poor root systems and stimulate less biological activity in the soil. They don't use nutrients efficiently, which leads to greater probability of nutrient and soil loss."

"People are accepting the idea of EEFs, and we continue to learn how to better use these tools," Blaylock said. "The advances in technology are amazing in terms of what we can do to control fertilizer release and minimize pollution," added Fox. "It's exciting to realize we have the knowledge and abilities to do this right." ■

Rob Stevenson is a writer for Canyon Communications, Mesa, AZ. Reprinted with permission from the Turfgrass Producers International's Turf News.