

Battle for Lake Erie includes debate over manure-based phosphorus concentration

8/31/2020

BY TOM HENRY / THE BLADE



Cows at an area CAFO.

THE BLADE

[Buy This Image](#)

A major agronomic debate is being played out in Columbus now, which has potentially large ramifications for western Lake Erie and goes beyond simply looking at the staggering volumes of liquid and solid excrement produced by northwest Ohio cows, hogs, and chickens.

It focuses on the minutia of agricultural science, right down to the parts per million of phosphorus applied to soil in the form of manure.

One of the many groups raising questions is the Lake Erie Foundation, a consortium of Lake Erie-area business and environmental interests.

That group and others, including Lake Erie Waterkeeper, want manure-based phosphorus applications dialed down to roughly the same concentration as commercially made, synthetic fertilizers, which is about 40 to 50 parts per million. Manure has for years been applied on northwest Ohio crop farms at much higher concentrations, usually 150 ppm. Some critics, though, claim the application rate has, in reality, gotten as high as 200 ppm to 250 ppm.

From information gathered in a public records request, the foundation believes the state of Ohio has rejected a recommendation from an independent consultant, McKinsey & Co., to promote 50 ppm as a limit for manure, even though Dorothy Pelanda, Ohio Department of Agriculture director, showed support for that in 2019. The firm was paid \$1.5 million to provide

advice to the DeWine administration for its H2Ohio program, which aims to improve water quality statewide through better farming techniques, more and improved wetlands, better pipelines, and other measures.

Much of the immediate focus is on a little-known federal document used to guide manure applicators out in the field.

Called the Nutrient Management Practice Standard, or more commonly Code 590, the document is developed by the Ohio office of the U.S. Department of Agriculture's Natural Resources Conservation Service in Columbus. It is reviewed and updated about once every five years, with a focus on Ohio soil. It calls for application rates of 150 ppm. Scientists believe anything in excess of that never gets absorbed into the soil and winds up in a western Lake Erie tributary, feeding the summer algal bloom.

Monday is the final day for the public to comment on the latest proposed update, which continues to call for application rates of 150 ppm.

Ron Wyss, a Lake Erie Foundation board member with a background in farming and sewage treatment, said the reality is many public officials "don't want to know" the rate at which manure is actually applied and that "accountability is almost zero," anyway.

"This is a political problem, no matter which party's in charge," Mr. Wyss, who also served on Ohio's first statewide phosphorus task force in 2008, said. "The bottom line is the 590 standard still allows livestock producers to apply manure at outrageous rates. We're not saying this [lowering to 50 ppm] has to be done tomorrow, but at least have a transition place in place."

In a July 30 letter to Ms. Pelanda, along with Ohio Lake Erie Commission Executive Director Joy Mulinex, and NRCS state conservationists Terry Cosby and Mark Smith, Lake Erie Foundation Vice President Matt Fisher cited much of what it had found through public records requests, including records showing a 150 ppm application rate "was in fact discussed at length" in recent months. He said too that his group would be satisfied if the 50 ppm application rate was phased in over five years, and that farmers "be given appropriate support to adjust their operations to meet that 50 ppm threshold."

"The State of Ohio paid McKinsey \$1.5 million to thoroughly evaluate the challenges and make recommendations to improve Ohio's waterways, only to reject one of the report's key recommendations," Mr. Fisher wrote.

Ms. Pelanda could not be reached for comment. But the Ohio Department of Agriculture often yields to 590 standards for consistency.

The NRCS said in a news release that what it ultimately agrees upon for its revised 590 standard "will protect Ohio's water quality" and be "practical and realistic for Ohio farmers to implement."

Ms. Mulinex confirmed that manure application rates were studied as the administration developed its H2Ohio program, the cornerstone of its efforts to improve water quality statewide. H2Ohio provides \$172 million in new funding during its first two years for a variety of programs, with a major emphasis on helping farmers enact stronger water-conservation practices to help curb algae-forming runoff.

But she said Ms. Pelanda never backed down from her interest in promoting a 50 ppm policy and, in fact, attached it to some H2Ohio program grant money a sign that things are starting to change.

One of H2Ohio's programs offers reimbursement of \$35 to \$65 an acre to those willing to haul manure miles away from livestock farms to phosphorus-deficient crop fields.

Such transportation costs can be enormous, and are often the biggest deterrent. Those who sign up can be reimbursed, but only if the manure is applied to field with less than 50 ppm phosphorus, Ms. Mulinex said.

She said McKinsey's recommendations "helped us frame our thinking" as H2Ohio was being developed, and that the consultant's recommendation for 50 ppm was part of a "range of options" as opposed to being an edict.

Although the Ohio Department of Agriculture gives advice consistent with what the NRCS provides - that anything stronger than 150 ppm won't get absorbed - there also is science which suggests northwest Ohio soil can't hold concentrations greater than 120 ppm, Ms. Mulinex said.

"The manure issue is definitely a hot topic in northwest Ohio," she added. "But when we look at the science of it, we were a little changed. I think the science is still being developed on manure's contribution [to algae]."

Jeff Reutter, retired Ohio Sea Grant and Ohio State University Stone Laboratory director, agreed the NRCS' 590 standard allows too much phosphorus in the form of manure to be applied.

"We know that fields that have too much phosphorus in the soil bleed too much dissolved and particulate phosphorus when it rains," he said.

Mr. Reutter was one of Ohio's chief negotiators several years ago when the state committed to a 40 percent reduction in phosphorus runoff by 2025 with Michigan and Ontario. He said the federal 590 standards "were never developed with the needs of the Great Lakes ecosystem and human health/HAB [harmful algal bloom] concerns in mind."

“Rather than reducing the standard to only the amount needed for crop production, we are attempting to continue to practice animal waste disposal throughout our watersheds and continuing to do exactly what we have always done,” he said. “If we continue with the same 590 standards and continue to allow more animals into the watershed, the problem will get worse, not better.”

Aaron Heilers, project manager of the federally funded Blanchard River Demonstration Farms Network and a Shelby County farmer, said manure application is commonly misunderstood, especially by nonfarmers.

What laymen often call application rates are actually soil test phosphorus readings, he said.

“These readings are a result of soil samples being collected from the field and sent to laboratories to determine the nutrient levels that are already present in the soil,” Mr. Heilers said. “Based on this information from a lab, an agronomist makes a recommendation to the farmer on how many nutrients need to be applied to the soil to meet the nutrient needs of the crop. So that is a major point that needs to be stressed.”

The oft-cited 150 ppm soil test reading number is dictated in Ohio's Livestock Permitting Program, he said.

“When a permitted facility has soil test phosphorus readings above 150 ppm, they are not allowed to spread more nutrients on that field. This number comes from years of research that shows the soil starts to lose the ability to hold onto that phosphorus when soil test readings are above 150 ppm,” Mr. Heilers said.

He said the 590 standard - both the current and proposed version - have strategies built in to deal with fields that have elevated soil test phosphorus readings.”

“When fields have elevated soil test phosphorus readings, the farmer needs to take additional steps to help protect against nutrients moving off the field. This includes tilling manure into the soil and having ground cover on the field to help hold the nutrients in place. The 590 standard typically recommends that manure is applied according to phosphorus content which is usually at a rate equal to crop removal,” Mr. Heilers said.

“Lowering the 150 ppm soil test reading threshold to 40 ppm or whatever number they recommend,” he added, “does not have anything to do with the actual amount of nutrients that are applied to the soil.”

Sandy Bihn, Lake Erie Waterkeeper executive director, said Ohio could show its commitment by not issuing new or renewal permits for livestock facilities known as concentrated animal feeding operations, or CAFOs, at the 150 ppm level.

She said she is “hellbent” on getting the numbers down, because “getting manure source reduction will yield the greatest phosphorus reduction to reduce harmful algae in Lake Erie.” Ms. Bihn said it is one of the easiest, most cost-effective things the state could do to reduce algae.