

Phosphorus Conference: Farmers Need Tools

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approaches for targeted, cost-effective, nutrient management plans throughout the Bay region."

As reported last week, for Pennsylvania agriculturalists the information presented suggested that nutrient management here will likely not become recommended as an "either/or" priority exercise, as is to happen in Maryland.

Maryland's situation was an issue of concern during the conference. It was reported that approval of legislation to create phosphorus-based nutrient management was imminent.

On Monday the Maryland Legislature, as expected, gave final approval of compromise legislation to regulate phosphorus applications to Maryland's soils.

According to a Maryland expert on the situation, the proposed legislation is expected to affect every farm in the state.

In essence the Maryland situation is to be that no one will be able to spread manure on their farmland if the phosphorus level of the manure would create a surplus of that nutrient. Nitrogen is to be purchased and used to fertilize crops. Manure is to be exported.

For Pennsylvania, it seems more likely that for instances where phosphorus is a problem, that practical nutrient management will be expanded in scope to go one step beyond focusing upon balancing nitrogen levels in manure with crop yield needs and existing soil levels.

From research demonstrating that agricultural phosphorus entering waterways comes from a small portion of a watershed, and in most cases from spot areas on a farm (generally along a stream or in a flood plain), it was suggested that

perhaps the most reasonable approach for Pennsylvania would be to identify those "source" areas on the farm as part of the existing nutrient management plan, and then manage those areas for the phosphorus levels.

As currently practiced, a Pennsylvania nutrient management plan is an exercise in accounting for nitrogen available for application to land and crop needs, a description of the pathways for nutrient flow, and management practices.

Another widely grasped aspect of phosphorus that was highlighted during the conference is that, in historic terms, it is only recently that phosphorus has become excessive.

For years it was a nutrient in demand that limited agricultural production.

It can be lost too, if it isn't treated with respect.

The bottom line of a presentation on world phosphorus, was that the world was phosphorus poor prior to the World Wars, especially since World War II man has been able to get lots of it.

It has been mined it from sediment loads made up to 250 million years ago, and gathered from other sources (guano) adding significantly to the existing amount of phosphorus that is now cycling in the world's ecosystems.

According to speakers, a lot of effort and money went into securing phosphorus for increased crop production and higher yields.

They said it would seem unwise to use treatments for swine or poultry manure that would bind the phosphorus into an unusable or unrecyclable form, turning back the clock on its bioavailability.

However, the panel of four discussed the way they are currently

dealing with the situation.

On the panel were David Brubaker with Hershey Ag in Marietta, a swine-raising operation; William Carmean of Snow Hill, Md., a poultry and grain farmer; Turp Garrett with Worcester County Cooperative Extension Service in Snow Hill, Md., which is in the middle of the poultry industry and watershed central to the pending Maryland phosphorus management law; and Jerry Hostetter owner and president of Hostetter Management Company in Lititz, a swine production and management company with 13,000 sows and 50 finisher barns.

From his perspective, Carmean talked about the uses of manure applications and alternative uses. He said he has been able to save from \$3,000 to \$5,000 per year in fertilizer costs from being able to use the nutrients in the manure his operations generate.

He said that he also already treats his poultry litter with alum, one of the suggested ways of treating manure to bind phosphorus, in order to treat beetles and for other reasons.

He said in order to compost his manure he'd have to expand his operation's manure sheds (used now to prevent rain from falling on it and leaching nutrients before it can be applied to fields) in order to be able to store it long enough to compost it.

Additionally, he'd have to spend extra time and money searching for markets for the compost.

He also said that some of the land in the Pocomoke watershed that never had poultry manure applied is naturally high in phosphorus.

David Brubaker said he oversees "... the application and utilization

of organic nutrients from our farms."

He said that "phosphorus is part of the puzzle" in piecing together his entire hog farm nutrient management plan.

According to Brubaker, what he could use from researchers are new techniques for separating liquids from solids, which could allow long-distance hauling of nutrients derived from the highly liquid swine manure.

The only technology that has been provided for swine operators to reduce the water volume of the manure is a two-stage lagoon system, which they employ.

He said nutrient testing of manure needs to be improved in order to keep up with regulatory demands.

He said, as it is now, he samples the manure he is about to apply on fields, but that it takes two weeks to get the nutrient analysis results.

If he could have a test provide on-site results, he said he'd be able to apply manure more intelligently than what current technology allows.

He also said that what is needed is "more constructive and productive dialogue between processors, researchers and regulators. He said the reason he agreed to participate in the conference was because he felt that it might be beneficial.

But he added that researchers and regulators need to be better educated about the real-world applications of technology and science.

He also said that he is frustrated because, he sees many blatant violations of existing laws that aren't enforced on smaller operations.

"We should all be under the same set of rules regardless of the size of operation," he said.

Hostetter discussed somewhat

more of the global aspect of the locally expressed nutrient concern.

His company is global. He was along with state Gov. Tom Ridge on an export mission trip to the Pacific Rim last fall.

In essence, he said the Pacific Rim doesn't have the land and resources to raise swine as efficiently as his company can, and they need and desire the food. The United States has the capacity, and the latest technology. That should be built upon, not torn down.

Hostetter talked about how the swine industry has changed significantly since he became involved in 1981.

He said that with a kill of 3,000 hogs per day, it was possible to gain backfat measurements on carcasses. He said that in 1981 the measured carcasses averaged 1.7-inches of backfat. He said 15 years later, the average backfat produced is down to .6-inch, reflective of feeding efficiencies he said. (Not to mention genetics.)

He said he didn't think it was necessary to sacrifice the environment in order to produce food.

According to Hostetter, through better efficiencies, the swine industry has been able to reduce the phosphorus in the swine feed by 28 percent. "We saw a cost savings and no change in performance."

The ration has 43 percent less phosphate now and he said they look at manure samples.

As far as using phytase, an enzyme that helps swine and poultry better utilize phosphorus in feed, he said they are in the process of using it.

Feeding efficiencies in hog raising have increased too, he said. He said that former good rates of growth were about 3.5 pounds of

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