

Weekly Article

3-7-2022

How Am I losing Phosphorus?

Hello, my Name is Richard Purdin with OSU Extension, Ag and Natural Resource Educator and Community Development Educator for Adams County. I hope to better inform local producers and the public of the latest news in the world of agriculture. All good things can't last forever but man it would be nice to have had another week like the first week of March! The week of March 7th is starting off on a wet and soggy note but is sure feels like spring. As I commuted into work on Monday morning March 7th, I could not ignore the amount of water running off the fields, road ditches were full, creeks were swelled and overflowing with water that looked more like chocolate milk! As an agriculture educator and farmer I often wonder what has happened to the days of just getting an easy soft rain instead of 1–2-inch rainfall events that runoff as quick as they come? The week of February 28th through March 5th was a beautiful week for producers to get much field work accomplished, manure application, plowing, moving hay, leveling ruts, and fence row cleaning are just to name a few projects that I observed taking place. I also talked to a few producers contemplating applying fertilizer to winter wheat and hay.

It can be tempting to apply nitrogen and Phosphorus fertilizer early in the season when we have nice weather but with what seems like a changing trend in weather patterns one might want to think twice before applying fertilizer too early. Water quality seems to be one of the biggest threats facing agriculture producers today and one nutrient that seems to get all the attention is Phosphorus. It was once thought that if producers could prevent erosion, then Phosphorus loss from the field would be prevented. But after much research, researchers have found that P can be lost in many ways, polluting our waterways in the process. Here are very interesting research results from an article written by Ryan Heiderman and Eric Cooley with the University of Wisconsin- Madison Division of Extension's Discovery Farms Program. For two decades runoff loss of phosphorus has been monitored through the Discovery Farms Edge of Field monitoring program and here are key factors when it comes to loss of phosphorus:

- **March is a hard month-** After 20 years of research and 2184 trials March routinely has the highest amount of runoff loss. Consider this before spending big bucks on Phosphate fertilizer and surface spreading in March.
- **There are two different forms of P Loss-** Research shows that the two main forms of Phosphorus loss, 71% of P is in the dissolved form and 70% is in the particulate form. Dissolved phosphorus moves with water meaning

risk of runoff and leaching is higher. Particulate forms are health by soil particulates and risk of loss is when soil erosion occurs.

- **No-till does not solve all the problems-** No-till production has greatly decreased particulate phosphorus loss but has led to greater dissolved P loss due to most P being stratified at the surface of the soil, this makes it more prone to runoff loss.
- **Phosphorus stratification can be hard on yields-** Phosphorus has a two-edged sword, first loss of money due to runoff of nutrients. Nutrients stratified in the top few inches of soil can reduce yield due to lack of nutrient in lower soil profile where mature plant roots need nutrients in the growing season.
- **Don't forget about the summer months-** May, June, and July have been shown to have the highest % of Particulate phosphorus loss, this means that the majority of soil erosion takes place during the growing season.
- **Final thoughts-** After reviewing this interesting research data, a few things come to my mind. The first thought is that Phosphorus is too expensive to waist, applying in March is risky business. My next thought is that we need to get Phosphorus in the soil, not only does this help plant growth, but it protects your investment by preventing runoff loss. Conservation practices such as cover crops can help hold nutrients in place when cash crops are not growing.

Some other details to go over

- March 22nd, 2022 – Bull Buying School located at Gustin Family Farm 4786 Spurgeon Hill Road West Union, Ohio 45693. Topics include reading EPD'S, proper nutrition, importance of bull soundness exam, semen testing, and phenotype and structural soundness. Call OSU Extension Adams County to RSVP by March 15th (937)544-2339.
- March 23rd Adams SWCD tree seedling scheduled to arrive. Call (937) 544-2033 (ext. 4) before coming to the office to pick up the trees.
- 2022 Tobacco GAP recertification course will be March 31,2022 at Raines Farm and Greenhouse, 10:00am-12:00pm. This event will be open to both Adams and Brown County producers. Call the Adams County OSU Extension office to RSVP at (937) 544-2339.
- April 13 6:00-8:00pm Small Ruminant School hosted by W/C Milling LLC, event location will be held at the Seaman Community Center 17806 State Route 247 Seaman, Ohio 45679. Please RSVP by April 6th by calling the Adams County Extension office at (937) 544-2339.