

## Clippings – March 28, 2022

### WISCONSIN VIDEOS EXPLORE WAYS TO SAVE ON NUTRIENT COSTS

**Fae Holin, MFA Communication Specialist**

If you're looking to make the most of the nutrients your farm holds, check out the short videos on optimizing nutrient management, produced by the University of Wisconsin-Madison (UW) Nutrient and Pest Management (NPM) program. The 12-video series can help farmers save money and avoid applying too much fertilizer to crops that don't need it, says Dan Smith, Southwest Regional Specialist with the NPM program.

"Back in August 2021, grain prices started to dramatically increase, and also, fertilizer prices," Smith recalls. "We started getting a lot of questions, like: 'How do we manage nutrients that we may already have on-farm?' and 'How do we purchase nutrients to supplement those on-farm resources and work hand in hand in a way that's economically wise and helps reduce environmental risks?'" Farmers wanted to find ways to avoid buying commercial fertilizer at record-high prices, Smith adds.

So he and his colleagues from across the state surveyed land conservation and extension offices to hone in on what information farmers would most value. The videos, some as short as 4-7 minutes, deal with topics including crop budgeting, soil testing, prioritizing applications, legume credits, manure credits, crediting cover crops, and managing sulfur and soil pH. The series, on YouTube ([click here](#)), finished with a video on [writing a nutrient management plan](#).

That video, which Smith narrates, explains why more farms should have nutrient management plans, and not just for regulatory obligations. He hopes farmers will use plans to think about where they spend money on their farms and where they could avoid taking environmental risks when applying nutrients. "Working on developing a nutrient management plan for your farm helps allocate on-farm nutrient resources like manure credits and legume credits from alfalfa terminated recently and combining those with commercial fertilizer sources. So you're able to look at your farm's data via soil testing to say: 'I really do need to purchase commercial fertilizer' or 'Maybe I don't need to purchase commercial fertilizer.'"

"That saves money, but also allows us to target fields that are low in phosphorus or potassium for applications of manure," he points out. "That can help dramatically reduce those chances of loading fields near the barn with a lot of phosphorus and properly allocating those nutrients to areas that need them."

In the video, Smith explains that farmers can write their own plans using SnapPlus (Soil Nutrient Application Planner), University of Wisconsin nutrient management planning software. The Windows-based program calculates potential soil and phosphorus runoff losses on individual fields and helps plan manure and fertilizer applications.

The SnapPlus cropping screen shows all crops and fields as well as soil test data for the current year, University of Wisconsin recommendations, and nutrient over- or underapplications.

#### Benefits of Nutrient Management Planning

An NMP identifies fields where water erosion is potentially reducing soil health and crop production. Wisconsin farms are, on average, losing an estimated 1.5 tons of soil per acre per year, or 8-10 tons per acre in southern Wisconsin by water erosion.

Estimated replacement value of soil is \$20/ton = \$20 - \$160/ton/acre/year.

Robinson, D.A., et al. (2014). On the value of soil resources in the context of natural capital and ecosystem service delivery. *Soil Science Society of America Journal*, 97(3): 469-479.

#### IMPROVED CROPPING SYSTEM PRACTICES

Writing an NMP in SnapPlus also provides field-by-field estimates of crop rotation and tillage impacts on key soil health indicators.

SnapPlus, on a field-by-field basis, automatically:

✓ Estimates soil loss from water erosion, allowing for the identification and alteration of cropping practices to promote long-term crop productivity.

✓ Calculates a phosphorus index (PI), an estimate of phosphorus transport from a field to a nearby water body. Knowing a field's PI allows a farm to alter its cropping practices to reduce phosphorus loss from the field, reducing crop nutrient loss and improving surface water quality.

✓ Calculates a field soil conditioning index (SCI), which predicts potential changes in soil organic matter due to crop management. Soil organic matter is key to soil health. Altering farming practices to increase a field's SCI can result in the long-term improvement of crop and soil productivity.



36.3% of Wisconsin cropland acres covered by plans in 2020

"SnapPlus has dramatically improved in the last four years or so, with implementation of a lot of tools that are really useful to all farms, like the mapping features, and it has recently adopted new ways to help us manage winter manure. For those producing a lot of forage and grazing livestock, there's a lot of good tools in SnapPlus to help allocate manure to fields and to help manage grazing rotations for nutrients."

"It's also easier to use. I first used SnapPlus in 2012 and had to manually enter a lot of data by looking up charts and looking up on the Web Soil Survey (operated by USDA's Natural Resources Conservation Service). Now the program will bring that information automatically into it via some data entry that's very simple," Smith says.

Farmers need to complete about eight hours of certified training to be able to write their own plans, but that training can be completed via online classes and cost little to nothing. "They'll just have to pay for soil testing. The base soil testing that we require is one sample per five acres every four years, so if they pay for that testing once, they are good for four years," Smith says.

"I think it's a really good investment. We often see, once the plans are written, savings on the average dairy farm of \$10,000, which is conservative. With the higher fertilizer prices, savings of \$30,000-40,000 are pretty common."

"Farmers get so much out of nutrient management plans; there are so many different things that they can learn about how they can manage nutrients on their farms to help save money. I like to talk about the soil nutrient value of the farm as a savings account; drawing down those excessively high soil test values for phosphorus is really valuable when prices are so high," Smith says.

For information on nutrient management training courses, check with your county land conservation office. For a listing of certified planners, [click here](#). For more on SnapPlus, [click here](#). The videos, edited by Kolby Grant, Northwest Wisconsin Regional Specialist, can be accessed [here](#) or click on individual titles below:

[Crop Budgeting](#)

[Soil Testing](#)

[Crops Responses Based on Soil Test Levels](#)

[Prioritizing Applications](#)

[Managing Soil pH](#)

[Determining the Economic N Rate of Corn](#)

[Legume Credits](#)

[Crediting Cover Crops](#)

[Manure Credits](#)

[Nutrient Application Efficiencies](#)

[Managing Sulfur](#)

[Writing a Nutrient Management Plan](#)