

Don't be neutral about adjusting pH

Keeping your soil at the right pH – not too acidic, not too alkaline – pays benefits for your crops and the environment.

Crops can use fertilizer or other nutrients in the field more efficiently – and grow better – with the right pH, and legumes like alfalfa stands can last longer. If soil is too acidic, some undesirable compounds such as naturally occurring aluminum and manganese, can be taken up in the roots and cause problems with plant health.

Adjusting the pH of your soil starts with soil tests, which are available to active customers of the Field Green® biosolids program. Next, decide what crops you want to grow and determine the optimum pH for the soil. The final step is using an industrial byproduct, like lime, or purchasing commercial lime and spreading enough to adjust the pH to the appropriate level.

The soils in our region tend to be naturally, and moderately, acidic. That's in part because of the pine forests that covered our area before development. Pine needles turn acidic when they decompose. In addition, our bedrock doesn't have much limestone, which would raise pH.

Match crop to pH, adjust with lime

That means raising the pH is a good management practice to look into even before fertilizing or using an organic soil amendment, such as biosolids. In fact, regulations require a soil pH of 5.5 or above before receiving biosolids.

Just because acidic soils can lower yields doesn't mean the more alkaline the soil, the better. A pH of 7 is considered neutral and corn's optimal pH is between about 5 and 7, for example.



Alfalfa does best in soils with a pH from 5.8 to 7.5, although Extension Service tests say 6.5 to 7 is best.

A crop can grow in a pH that's out of its optimum range but you may have to add more for fertilizer, as nutrients will bind to soil particles rather than be absorbed into your crop's roots.

Some good farming practices, such as increasing organic matter and boosting yield can make soils more acidic, too. Organic matter creates hydrogen as it breaks down, which acidifies soils. Higher crop yields create calcium and magnesium, which tend to keep pH higher.

So, even if your fields had a good pH in the past, it's important to keep checking soil tests for pH and making adjustments as needed.

Call Troy Salzer of the Carlton County Extension office for information on soil tests or industrial byproducts.

His phone number is (218) 384-3511

Inside

Simpler program will help farmers protect water, page 2

Make your alfalfa last longer, page 3

WLSSD participating in high-quality biosolids study, back page

Flexibility big part of new ag water quality program

By Ryan Clark
Carlton County SWCD

There are many opportunities for farmers to participate in voluntary natural resource conservation programs to prevent soil erosion and nutrient pollution, among other water quality threats.

A new Minnesota program attempts to simplify the voluntary conservation process for each and every farmer in the state.

The Minnesota Department of Agriculture (MDA) has created the MN Agricultural Water Quality Certification Program (MAWQCP) in order to both assist ag producers in implementing conservation and celebrate an individual farmer's dedication to water quality.

The beauty of this new program is its flexibility for farmers to reach the state's water quality standards on their terms, meaning the farmer can choose practices that work into their unique operation while avoiding any new water quality regulations for the next 10 years.

This program is essentially an



environmental insurance policy allowing for a worry-free future.

Additionally, a farmer participating in this certification process has an opportunity to tap into technical and financial assistance only available to farmers seeking certification.

This means less competition and better cost-share rates to try new, innovative conservation practices like cover crops and other soil-health-building practices.

This certification can also be used as a marketing tool to

promote agricultural products to consumers who are concerned about how and where their food was grown and what environmental protections are in place.

The MN Ag Water Quality Certification Program is an excellent opportunity for farmers to show their dedication to water quality.

It involves little time commitment, and is entirely voluntary with no financial commitment required from the farmer.

Ryan Clark is the area certification specialist with the Carlton County Soil & Water Conservation District. You can contact him at (218) 384-3891 for questions about the Agricultural Water Quality Certification Program.

You can also contact your local SWCD or a USDA Natural Resources Conservation Service office for information on conservation programs.



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A balanced diet helps alfalfa live long

By Jane Anklam

University of Wisconsin-Extension

One question I get from farmers in our region has to do with why alfalfa stands or other legume crops don't last as long as expected.

For alfalfa, it may be winter kill. Legume staying power also can be related to the seeding mix, height of the cut or variety. Cool wet years or hot humid weather also has an impact on disease and insect pests.

Most often, however, for our legumes the culprit for lower yields is lack of nutrient balance – whether using biosolids, commercial fertilizers or other sources of plant nutrients.

Field Green® is a plant nutrient product derived from biosolids. The biosolids offer nitrogen, phosphorous and potassium along with micronutrients, just as other commercial and organic plant fertilizers do.

WLSSD biosolids employees, who all hold state licenses, collect soil samples for the specific fields considered for biosolids application.

Nutrient credits are available on fields where a legume had been growing on the field or manure was applied the previous year. These nutrient credits can help balance the final recommendation.

Remember, it does matter that Wisconsin soil test results are from a University of Wisconsin-approved lab and Minnesota soils test results are from a lab that follows Minnesota soil test guidelines. Soil test results and recommendations are used to develop a nutrient application plan for the fields.

This plan indicates rates and where the biosolids will be applied. It also tells the farmer what nutrients may



be needed in addition to the biosolids to achieve the recommended nutrient goals.

The plan is given to the farmer. It is important for the farmer to compare the soil test recommendations for nutrients needed and which nutrients the biosolids will provide.

If there is a gap between what the farmer's crop needs and what the biosolids can provide, the farmer should make up the difference. In most cases, if there is a deficit, it will be potassium.

Potassium is an essential nutrient for plant growth, enabling the plant to function in the use of nitrogen and storage of starch in the root system. For legumes to survive within a forage rotation, potassium needs must be met.

A deficiency will be noted in the mature leaves of the legume, starting with whitish-grey spots along the margins of the older leaves. Eventually these same older leaves will turn yellow and fall off. Because potassium helps with food storage

in the roots of the legume, proper amounts can improve winter hardiness.

The ability for the plant to survive depends on proper potassium availability applied in the form of potash. Since legumes are the protein builder of your forage, it is important that this nutrient is not neglected in your nutrient management.

Nutrient management for legumes in your forage stand is an important part of realizing all the benefits of biosolids application. Plan accordingly and you will gain on yields throughout the life of your forage stand.

For more information, call Jane Anklam of the Douglas County Extension at (715) 395-1363



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Clear Answers for Clean Water®

WLSSD is participating in a national study to help develop standards to define high-quality biosolids and develop a roadmap to further improve biosolids nationwide.

The study is sponsored by the Water Environment Federation.

The first part of the study is to conduct extensive tests on biosolids samples from across the country, including WLSSD's Field Green® biosolids.

This is one of a number of national studies WLSSD has participated in. WLSSD also has worked with state researchers on projects including utilizing biosolids to reclaim mine tailings, and with Minnesota Extension to determine the most effective use of biosolids on area crops.



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