BIOSOLIDS DIGEST

FIELD GREEN The wiser fertilizer™

Published by the WESTERN LAKE SUPERIOR SANITARY DISTRICT Vol. 20, No. 1 Summer 2017

Call ahead to get on schedule

Scheduling Field Green® fertilizer applications is frequently a juggling act—weather, road and field access, and more all come in to play.

Now, increased demand has made it even more important for customers to plan ahead and get their field applications scheduled well in advance – even a year or more ahead of when you want biosolids.

The Field Green® program's success is one of the reasons scheduling is more difficult now. WLSSD's Field Green® program began nearly 20 years ago and provided fertilizer as a free service to farmers in northern Carlton and southern St. Louis Counties. Since then, farms in Douglas County Wisconsin and southern Carlton County and Iron Range taconite mines have been added to the mix.

While it's easy to schedule an application of Field Green® (see sidebar), the process of getting to your field isn't as easy. There are a lot of variables involved, and many are out of our control.

When WLSSD's biosolids program started in the late 1990s, we produced a fertilizer and soil amendment by mixing lime with biosolids. Back then, the fertilizer was provided free to farmers exclusively in Carlton and southern St. Louis counties.

Our biosolids are now produced with a digestion process that is among the best in the country, and field practices have been steadily improved to the point they are among the best in agriculture.

WLSSD's diversification and improvements are similar to what's happening nationwide. Biosolids programs through the United States and Canada are developing new products and new ways to use biosolids to benefit our economies and environment.

But some things haven't changed. Weather still has an impact, so your field may have to be scheduled for a drier season. If your field is sandy, it can be slotted for a wetter season. A field that is flat may be prioritized for the winter.

Although WLSSD's Field Green® program now books well into the future, new farmers and customers are always welcome. It's part of our mission to serve the region as broadly as possible, and to recycle and reuse as much as possible to benefit the environment.

Scheduling tips

- You must call to get on the schedule
- Call well ahead. Schedule is often booked a year in advance
- To get on the schedule, call Paul Wilken at (218) 740-4764

Inside

Worry-free first cutting: Let the cattle graze it

By Troy Salzer
Minnesota Extension Service

Putting up dry hay in northern Minnesota can be a challenge, especially during years like 2016. Certainly, technologies including tedders, chopping, wrapping and rollers/crimping, have helped, but often we need a few hours more to get the hay completely dry.

A heavy crop of hay requires even more time to get the moisture evaporated out of the windrow. Sure, the tedding and spreading helps, but trying to harvest earlier in the summer when soils are wetter and forages less mature is still difficult.

This leaves farmers who put up dry hay exclusively in a dilemma. Waiting until the end of June or beginning of July sacrifices quality as well as yield.

These issues have led me to ponder what options we have to "Reset the clock" for the hay crop, and not hurt yields. Research suggests quality tends to peak in the first week or two of June, so the use of wrappers for wet hay has been a game changer. But for farmers who don't have enough livestock to feed the wetter product (if any), it is difficult to market the wet feed.

Discussions, field trials point to grazing

This has led to discussions among farmers to come up with solutions to this dilemma.

The solution showing the most promise to date is grazing the hay fields' "first crop" in spring, resetting the grass maturity clock. Sure there can be challenges with the process, including putting up fences, compaction or pugging, water access and distance from home farm. All can be solved with careful planning and management.

Currently, some of the techniques farmers have tried include grazing hay fields from the third week of May until the first week of June. It is best to use short duration -- less than five days on each field.

Grazing is an easy way to harvest the first crop and sets up ideal harvest during the first week of July, characteristically one of the best times of the year in our region to dry hay.

"This process has allowed me to harvest higher quality forage for winter feed, while getting started grazing sooner in spring without the further investment in a wrapper," said a farmer who experimented with grazing the first hay crop.

Total yield, quality increased

Some might be concerned about lower yields, but quality increased in all cases. Additionally, total yield for the season (including estimated yield for grazing) increased in all cases by three-tenths to seven-tenths of a ton per acre.

Field trial results:

- **Estimated grazing yield: 1 ton of dry matter per acre**
- **Hay yield of 2nd crop decrease: .2 - .6 tons**
- **Estimated seasonal yield increase: .3-.7 tons**
- **Hay Quality increased: 2-3 percent crude protein, 15-32 percent relative feed value.**

Keys to Success:

- **Quick duration grazing**
- **Stay off fields when wet**
- **Minimize travel to water**
- **Leave 4-6 inch stubble in all cases to minimize yield loss**

WLSSD

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Pasture productivity pays dividends

By Tom Gervais
Natural Resources Conservation Service

Pasture is an important resource in our region but may be overlooked by livestock producers.

With our short growing season, and seemingly endless winter-mud season, many farmers have to focus significant time and effort to produce valuable winter feed for their livestock.

Given a little bit of TLC, though, your pastures may be able to produce additional forage that reduces annual feed costs.

The two most limiting factors in pasture production in our area are grazing management and soil fertility.

Rest, grass height are important

The typical pasture plants we have in this area need to have adequate rest periods between grazing, and also need to remain a certain height after grazing. The rest period that forage plants need between grazing will vary, but will generally be between 30 and 60 days, and the minimum height in our area is 3-5 inches.

The bottom line here is that grazing too often or too short will, over time, result in low-yielding pasture and the increase of undesirable plants, such as weeds and brush.

Farmers are able to control these factors by developing a pasture management plan for the needs of each farm.

This plan will generally involve such practices as subdividing pastures with temporary or permanent cross fencing, developing a water source for each pasture, pasture seeding, controlling weeds, and other management recommendations that may be necessary.

Soil fertility is key

It's well known that soil fertility is key to productive agricultural land. A pasture might be one of the last places that a farmer may consider soil amendments, but paying attention to pasture fertility is worth your time.

One ton of grass forage on a dry matter basis will remove around 27 pounds of nitrogen, nine pounds of phosphorous, and 31 pounds of potassium from the soil.

In a grazing situation, about 80 percent of these nutrients are returned to the soil through manure -- except that up to 65 percent of the manure will be deposited in livestock "camping" areas near shade, water sources, gate openings, or other areas where livestock like to hang out.

So while a high percentage of forage consumed is returned to the soil as nutrients, it can be in the wrong spot! The result is uneven fertility.

Some of this uneven nutrient distribution can be addressed with grazing management strategies.

However, assuming a 2-ton yield on pasture, at best you are losing somewhere around 11 pounds of nitrogen, 4 pounds of phosphorus, and 12 pounds of potassium per year and over a 10- or 20-year period will result in low fertility levels limiting forage production.

Fertilizing a pasture can be challenging because of steep slopes, poorly drained soils, rocks, trees, etc. Luckily there are many options available for improving pasture soil fertility.

For more information:

NRCS-Duluth, (218) 720-5308

Carlton County Extension, (218) 384-3511

Test soil first

The process should begin with soil tests.

Once you determine which areas to fertilize, you can figure out the best way to apply amendments. Soil amendments like biosolids, stockpiled manure and wood ash are probably best utilized on your open or tillable pastures.

Where physical features limit equipment access, good options for nutrient application may be commercial fertilizer delivered via a three-point cone spreader, or out-wintering livestock. Out-wintering livestock is the process of strategically feeding animals on pasture (or other lands) for the primary purpose of improving soil conditions.

In any case, you should get analysis of your nutrient sources in order to determine the correct application rate.

The analysis of biosolids and wood ash are readily available through your supplier, but in the case of manure you will need to have a sample analyzed by a lab prior to spreading.

Remember to follow all state laws for nutrient application.

Pastures can produce

Implementing grazing management techniques and improving soil fertility are two great ways to improve the condition and productivity of your pasture resource.

Improving pasture productivity can provide your farm the opportunity to be more profitable with a low-cost livestock feed source.

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Clear Answers for Clean Water™

New Internet site collects research on biosolids

A professional organization has produced a web site rounding up scientific information on biosolids for the general public.

The web site is produced by the Water Environment Federation, and includes information on best practices, the value of biosolids, innovation occurring throughout North America, climate benefits and how biosolids benefit plants.

You can find the site at:

www.biosolidsresources.org

The Water Environment Federation is a scientific and technical organization of wastewater professionals and scientists throughout the world.

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