

## Making hay to make money

Selling hay can be a profitable enterprise, despite the recent up and downs in the regional market.

Consistent quality, paying attention to what buyers want – and a dose of good customer service – are the keys to riding out a market like we’ve seen locally. Prices were as high as \$160-\$170 a ton in 2014, and since then have dropped to a more-normal \$60 to \$70 a ton, said Troy Salzer of the Minnesota Extension Service.

“The trick is to produce a package that people want, and being fairly consistent with the quality,” Salzer said.

### Offer variety

Often, hay is sold to individual buyers. Almost always, each buyer will have different preferences.

Some want straight alfalfa, some straight grass, some a mix.

Salzer recommends managing fields to work with a forage stand as it ages. Normally, an alfalfa field will give way to grasses over the years. Strategically rotating fields through the cycle makes it possible to offer different mixes.

Other factors play into buying decisions. Some beef and dairy farmers want test results before buying, and horse owners want dust-free hay with a certain look, said Lee Todnem, an agricultural economics instructor at Central Lakes College in Mora.

### Keep it fresh

Hay does not age like good wine. Storing bales inside or wrapping them with netting will preserve value, Todnem said.

Inside storage pays dividends for local farmer Harold Jobe. Several years ago he sold his dairy herd and ended up with a couple of extra pole barns. He stores his round bales there, and those bales are in good shape come spring. Among other



**Consistency, variety and good customer service are keys to selling hay for a profit.**

things, the outside of the bales stay fresh.

“I usually put the best quality hay in there, the fields with the most alfalfa and clover,” he said.

The benefit? “I can charge \$5 more a bale,” he said.

### Consistent quality

Matching production with peaks in the market is tough. Being ready for a peak in the market is doable, if you pay attention to consistency.

One way to keep production consistent is to develop a nutrient management plan. Minnesota and Wisconsin Extension Services can help, and the Natural Resources Conservation Service has cost-share programs to help farmers with plans.

The key is planning and addressing your soil’s nutritional deficits. Field Green® biosolids, for example, provide slow-release fertilizer. Some of its nutrients carry over to the next year. Setting up a regular biosolids schedule, even if it’s every other year, is a good start.

Field Green® also improves the quality of your hay crop, making it more valuable to customers who want high-quality hay.

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# Last winter was tough on alfalfa

Lack of snow and seesaw spring temperatures led to widespread winter kill in some fields.

**By Troy Salzer**  
**University of Minnesota Extension**

Last winter our region had unusual weather that put a lot of stress on legumes.

Although the 2013-2014 winter had worse weather by most people's standards, alfalfa was tucked under two to six feet of snow then. In many places, the ground didn't even freeze, unlike this past winter.

Yet ground freezing does not tell the whole story behind stress legumes went through this past winter.

Several factors affect legume survival, and this winter had conditions that potentially could kill 50-90 percent of the alfalfa and red clover in our region. Recently, I dug hundreds of plants and found many with severe damage to their crowns.

Dr. Craig Schaffer at the University of Minnesota has described how plants can break dormancy. At some point the plant gets warm enough to start growing but then faces with severe conditions bursting cells in the plant's crown. Cell bursting causes most cases of winter kill.

This also is usually the cause of widespread plant kills, in contrast to isolated areas of that could have more to do with drown-outs or ice sheeting. You might remember in March the weather sometimes felt like May, and was followed by cold temperatures. This is likely the cause of any widespread winter kill.

It's important to be ready to respond to winter kill. Often these stands will produce a first crop but will die before the next crop.

## You can recover from winter kill. Here's how.

**Early in the year, here's how to get an indication of winter kill:**

- Check older stands first. They are more susceptible.
- Lower fertility fields are also at higher risk.
- South facing slopes are more prone this year.
- Grassy fields tend to have fewer issues due to more insulated cover.
- Lower areas tend to have more risk.

**Once your crop grows three to four inches, use this procedure:**

- Select random one-square-foot sites to evaluate. Check one site for every five to ten acres, at the minimum.
- Dig up all of the plants in the one-square-foot area. Prick the crown and buds with a knife to determine if the tissue is still alive.
- Count the number of live plants per square foot. Use table below to begin your rating of the stand.
- Split the taproots and evaluate them. The core of a healthy taproot is firm and creamy-white. Damaged or dying taproots are yellowish-brown to chocolate-brown in color, and watery or dry and fibrous in texture. If the taproots are more than 50 percent diseased, reduce your initial stand count accordingly.

**Use this table to evaluate the health of your field**

Age of stand	Plants per square foot		
	Good	Marginal*	Consider reseeding
1	More than 12	8 to 12	Less than 8
2	More than 8	5 to 6	Less than 5
3**	More than 6	4 to 5	Less than 4
4 or more**	More than 4	3 to 4	Less than 3

\*Healthy alfalfa plants in thin stands often produce more individual stems per plant and compensate somewhat in yield.

\*\*If 50 percent or more of the plants have crown or root rot, consider reseeding.

**Some options for responding to winter kill include:**

- Plant an annual like corn or oats before or after first crop.
- Fertilize the grass within the legume stand, so the grass will thicken and fill in the stand.
- Reseed red clover or alfalfa with a no-till planter. Be aware that seeding alfalfa into alfalfa can be difficult because of toxicity problems. No-till seeding grass or an annual like oats can also thicken a stand.



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# Biosolids job #1: Protect water quality

Biosolids guidelines to keep nutrients on the field and out of waterways are among the most protective in agriculture.

WLSSD uses precise and detailed procedures to follow those guidelines, often doing more than required.

## Spreading just enough

The process starts before biosolids are delivered to a farmer's field. Field Green® biosolids are tested regularly to measure how much nitrogen and phosphorus are in the biosolids.

Nitrogen is the most important calculation. WLSSD's Field Green® crews deliver only enough biosolids to each field to supply enough nitrogen for the current crop year.

In some other regions, with intensive agriculture, nitrogen has polluted some drinking water wells. That can happen when crops are over-fertilized or animal waste isn't handled well.

Groundwater pollution isn't a problem here like it is elsewhere, and biosolids practices are designed to keep it from becoming one.

Phosphorus can pollute water if it builds up to high levels and runs off fields into nearby waterways. Biosolids regulations require soil testing to monitor phosphorus levels.

The nature of biosolids helps, too. Much like manure, soil bacteria must break down organic molecules with nitrogen and phosphorus and release those nutrients slowly as



**Maps like this one are used to record the many details biosolids operators keep track of in the field, such as setbacks from waterways, wetlands and drinking water wells. The computer data are loaded on a Global Positioning Device mounted in the operator's tractor for precise work in the field.**

plants need them.

## Spreading safely

Field practices also are important. Again, the process starts well before a truck arrives at a farmer's field.

Each field is evaluated separately in a process closely overseen by the Minnesota Pollution Control Agency or the Wisconsin Department of Natural Resources.

Several factors can disqualify a field from biosolids application.

Biosolids won't be applied to soil types with groundwater that comes within three feet of the surface at any point of the year.

If the type of soil allows water to drain fast, groundwater can't be within five feet of the surface. Both

criteria are similar to septic tank rules.

In addition, biosolids won't be spread on slopes that are too steep.

Fields are inspected at least twice.

The first is by a WLSSD biosolids operator. The second is by an independent soil scientist.

Each of these inspections can result in a field being removed from the process.

## Protecting waterways

Among other things, the WLSSD biosolids operator and soil scientist identify waterways, wetlands, and drainage areas in the field. The soil scientist also verifies soil types and collects soil samples.

Good field practices for fertilizing include providing

setbacks, sometimes called buffer zones, around surface water.

The Minnesota legislature is working on a law requiring 50 feet of perennial vegetation along all state waterways. Although biosolids regulations don't require permanent vegetation, those regulations require larger buffer zones.

For example, biosolids can't be spread on the surface within 200 feet of waterways, streams, or even within 100 feet of the center of grassed waterways that collect water only during heavy rainstorms.

## Using technology

Once field inspections are complete, a computer map is generated for each field.

It starts with a certified operator marking all water features in the field with precision Global Positioning System (GPS) units. The GPS data is transferred into computerized maps to lay out buffer zones.

The maps are loaded onto a GPS unit in each tractor so the driver knows the exact location of each buffer zone.

The complex process requires care and training.

The concept is simple, however: only spread enough biosolids as necessary, and keep a lot of soil between the biosolids and water so the crops are fertilized, not water.



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Clear Answers for Clean Water®

**Customer demand for Field Green® biosolids** has grown a lot in recent years.

Because of that, the program is booking well into the future — as much as two years.

Make sure you get biosolids when you need it by calling to get on the schedule, and also to set up a regular plan for application events.

**Call Paul Wilken at WLSSD, (218) 348-9457** to schedule a Field Green® application.



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