

THE MANAGER

FORAGE MANAGEMENT

By Tom Kilcer

The forage production shortage of 2011 will be felt for years. There are a number of steps to help soften the blow.

Forage Shortage and What to Do About It

The season of 2011 is one that most want to forget. Dairy farmers realized they could increase profitability by moving to high forage diets, then the season drastically reduced the available forage supply. Unfortunately, forage shortage will continue to rebound and continue to impact forage supplies for the next two years. A number of steps can be taken to soften the blow of forage shortage.

Follow these strategies for the earliest return of forage:

- Apply nitrogen to mostly grass fields. Many fields were not harvested until July because of wet conditions. Apply 75 to 80 lbs of nitrogen (plus sulfur – 40-0-0-4S if no manure was applied the past year) to easily double the first cutting yield off of these traditionally marginally managed fields. Harvested a week to 10 days earlier than alfalfa, grass fields can supply forage and support the highest levels of milk production.

- Plant oats with new seedlings. This is an old practice that many farmers stopped because they switched to better seedlings. Major weed outbreaks can be controlled with herbicides. Oats, planted with the legume seeding and harvested at flag leaf stage, will give several tons of very high quality forage by mid to late June. If allowed to go to boot stage, oats produce excellent forage for heifers or, if no manure is used, can be fed to dry cows.

- Use winter grains as forage. An increasing number of farmers have discovered the many advantages

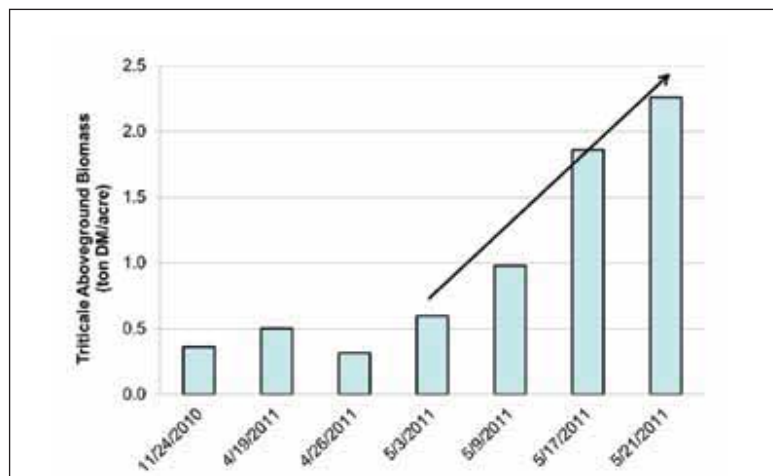
of winter grains, especially triticale, including the Van Slyke's, who are featured in a sidebar of this issue. Applying nitrogen early (see grass above in reference to sulfur needs) and harvesting at flag leaf stage, not traditional boot stage, can give some of the highest quality forage possible in the Northeast. This harvest comes at the same time as early grass and so a short season, high energy forage crop, can be grown immediately after it. Because of the very early growth, manure can only supply half of the needed nitrogen, so rapidly available commercial nitrogen is needed to supply the rest.

A similar double-crop option can be used for fields where hay crop has run-out. Apply nitrogen, harvest hay crop early, and then follow with short season energy forage.

- Short season energy forages can be short season corn, the new short season bmr sorghums, or the sorghum Sudans, or teff.

The earliest harvest is teff. Teff produces a cutting 47 days after planting. Requiring only 50 lbs of nitrogen per cutting, it produces forages equal to high quality cool season grasses. A critical step is to move the cutter bar up to 3 to 4 inches. This has a huge beneficial effect on the next cutting, which has to be grown from the remaining leaf tissue. Using this system, 2.75 tons of dry matter is produced in as short as 17 days after the first cutting. Both teff and sorghum Sudans require warm soils for successful stand establishment.

The next earliest forage supply is BMR sorghum-Sudan or one of the high quality Sudan grasses. These are proven in research to produce the same amount of milk as good quality corn silage in a high forage diet. Again, higher cutting height will speed re-growth. The first harvest comes about the middle of July. This is a crop for managers who pay attention to details. It needs to be harvested at about



FYI

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3 feet in height, and has been measured to grow three inches in a day. Taller crops maintain their quality, but dry matter yield and the amount of water to remove, dramatically increases as it grows taller. Intermeshing rollers are far superior to flails to dry this crop for silage. It will produce 2 to 3 cuts a year.

The next earliest crop is a short season corn (< 85 days) planted as the first corn in the ground in the spring. Short season corn is made by shortening the vegetative portion of growth. This produces a shorter plant with less potential silage yield. We have researched this for several years and find that much of the yield loss can be offset by planting at much higher plant populations. Our experience is that dropping 40,000 seeds/acre gives a dense stand of short plants. Barring any delays to maturity, such as prolonged dry spells or excessive cloudy weather, farmers can expect mature corn silage by the beginning of August. A major concern is that short season corn is bred from flint type endosperm. This produces very hard kernels that may forage test well, but a significant portion of the energy then passes through the cow undigested and ends up in the manure. This can be offset by planting short season varieties that have floury or soft endosperm. Thus, whether processed or not, the cows will retain a greater portion of energy that the grain contains. If the harvest is early enough, a late summer legume seeding could follow. An alternative is to grow a fall crop of spring oats.

A potential new crop is just breaking on to the scene. It is 83 day BMR dwarf sorghum. It only requires one cutting and if harvested at soft dough, can be direct chopped without the necessity of drying, like sorghum-Sudans. The dwarf gene makes for a short stocky plant compared to the traditional tall, pencil thin sorghums that lodged. The short plant can actually out-weigh the taller, thinner plant. It is



Winter triticale, Van Slyke Farm, Wyoming Co NY, April 21, day of harvest.

critical that your drill or corn planter be able to plant only 8 to 10 lbs of seed/acre. Higher populations, like excessive high populations in corn, will lodge. More research on this crop is being conducted at the Cornell Valatie Research farm.

Double crop. All of the above high energy crops can be planted after a harvest of winter grain forage, such as triticale. These crops also can then allow for a subsequent winter crop planted after the harvest of the short season energy crop, and continue to produce high yields.

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Winter Triticale as a Cover Crop

Winter triticale is successful as a cover crop and a feed to help stretch forage inventories at Van Slyke's Dairy Farm in Pike, NY.

"We've been doing our own research on cover crops for several years. We looked at the cheapest and the most effective cover crops and have been on both ends of the spectrum of expense and effectiveness. Winter triticale seemed to be right in the middle. It's not much more expensive than wheat, oats or radishes, which we weren't trying to harvest," said farm partner Ken Van Slyke.

Van Slyke was "intrigued" by the nutritional value of winter triticale, which is as good as or better than BMR corn silage if harvested at the proper time, he said. And winter triticale is a better fit for the farm's bunker storage and nutrition system.

They planted 200 acres in 2010, had planned for 300 to 400 acres in 2011, but because of the weather again planted 200 acres, Van Slyke said. Seed was drilled or incorporated with an Aerway. The 2011 crop yielded 4.5 to 5 tons as fed. Manure was applied when seeded, with a second application in spring, along with 100 lbs. of N.

"We mow between 4 and 5 inches of stubble, spread manure after the hay is off, chisel plow, fit, then plant, just the same as normal corn ground. Any potential regrowth is controlled with our typical herbicide program," Van Slyke said.

The crop was harvested on May 20 and fed immediately lasting through August as 50 percent of haylage dry matter.

"The cows milked well all summer," Van Slyke said, and "the vets and herdspeople commented on how well the cows were able to maintain good health and reproduction."

Winter triticale is hard to "get dry" and even with the "hay in a day" system and passing the tedders twice it was still "wetter than I would like." As a feed, it is palatable, smells like "sap sugar" and went a long way to stretch the farm's haylage inventory.

"We have more haylage in inventory than we have had for the last 7 or 8 years," he said.

Van Slyke said this cover crop fits into their rotation because they plant a shorter day length corn variety < 90 days and start to harvest corn in late August. It will not work on a farm that plants >95 day varieties.

"It is a balance. It may not work on other farms," he said. "It's only our first year but everything points positive. Timing, like any grass, is going to be critical. If it worked so well in the weather of 2011, it will probably work in any season."



Winter triticale, fall 2010, van Slyke Farm, Wyoming Co NY

is inconsequential. Other non-feed operating costs do contribute to a daily per cow “overhead” expense, including her share of that day’s machinery and equipment run, fuel burnt, bedding soiled or labor. Best estimate I can find is about \$1.00 to \$1.25 per cow per day. Cows with routinely less than \$2.50 IOFC per day are candidates for culling, particularly if pregnancy status and accrued insults are also against her. Your nutritionist can help estimate ration costs per unit intake, and expected level of intake per incremental range in production, to identify cows with slim IOFC margins. Add what else you know about individuals on the list and significant forage may be spared. The “low IOFC margin” cow list is often longer than you imagine.

Minimizing Risk with Next Year’s Crops

In addition to employing Agronomic “Best Management Practices” with 2012 crops, there may still be time to minimize exposure to weather risk for corn silage acreage. While not a perfect match, savvy dairy producers in land-competitive neighborhoods use corn crop insurance to cover potential losses. NYSDAM’s crop insurance page is online at: <http://www.agriculture.ny.gov/AP/CropInsuranceSpecialty.html>. Under “Field Crops (Corn and Soybeans),” click on the link for “Video Interview: Dairy Field

Crops – David Wood.”

Adapting to Longer Term “Tight” Forage Supply Situations

If the term “whole farm budget” has you mentally running for the exit, you might be surprised at how much data you do have to “populate the spreadsheet.”

Farms with excellent cow comfort, top-notch management of at-risk close-up and transition cows, and well-grown first calf heifers, have time periods with no obvious broken cows to cull and springing heifers and cows that need a stall. If management practices and facilities are under control and if you expanded to the practical extent of your land-base, it may be time to hit the “rebalance” button. The whole-farm budget approach may be the only way to reconcile the most profitable mouths to feed from a limited acreage base. Different configurations of cow and heifer populations can get you to the same financial sweet spot. The same “what if” questions can also prepare you for what makes the most sense if you have back-to-back bumper crops and have inventory to mine. Lenders, independent financial consultants, FarmNet financial consultants and others have access to and experience with whole-farm budgeting software. They will also be able to tell you what kinds and quality of data you need for optimal solutions. □

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Most of the corn last season yielded 12 to 20 tons/acre. The short season corn planted at high populations yielded 19.6 mean ton/acre and the sorghum yielded 19.3 tons/acre. Adding an additional 8 tons of silage/acre from the winter triticale gave us 27 total tons off of the same acreage in one year. Repeating it each year spreads the risk of one crop getting decimated, spreads the work load, and protects the soil on highly erodible land (HEL) land by providing a profitable forage cover crop. It also opened additional windows to spread manure from storage.

August Oats: When we reach the beginning of August after early short season corn or after failed hay stands, there is still an opportunity to grab some high yields of very high quality forage. Planting grain type oats at 4 to 5 bushels/acre at the beginning of August will yield 2 to 4 tons of dry matter at the end of September. This forage has tested at over 4,000 lbs of milk/ton – a very highly digestible energy and protein source. In our research, the yield and protein levels justified 12,000 gallons of manure/acre, immediately incorporated, to meet the nitrogen needs (low phosphorus soil test). Because of the lateness of the season and the very high yields, it will need to be tedded to drop the moisture to proper ensiling levels.

August Oats Plus: In the above research, we simultaneous planted 80 to 100 lbs of winter triticale with the oats. By harvesting the oats at greater than 3 inch cutting height, the winter triticale was able to re-grow before winter, and thus give us another early very high quality forage harvest the next spring.

Each of these crops can give a forage boost. They take some planning and effort but the reward of increased profitability from high (>60%) forage diets is well known. □

Cover Crops that Pay

For years, conservationists and agronomists have recommended cover crops to reduce soil erosion; conserve expensive fertilizer nutrients; significantly inhibit quackgrass, dandelions, and winter annuals; and more recently to improve soil structure for higher stable yields. They cajoled, pleaded, and outright paid farmers to grow cover crops. Many were thrown in so late that they had very little beneficial impact. With Winter Grain Forages that produce high yields of the highest forage quality possible in the Northeast, the paradigm has shifted dramatically. Many farmers found in the last wet spring that the winter forage ground was the only place they could go without getting stuck. Winter grain forage has 60% less available water than under bare soil. Any forage with a digestion rate of over 3.5% kd/hr is considered very good forage. Winter grain forages harvested at flag leaf stage, routinely have kd/hr digestion rates of 6 to 8+ after fermentation.

The three main winter grain forages are wheat, rye, and the newer triticale. For high quality forage, Dr. Cherney of Cornell University found the stage of harvest (flag leaf stage) is more important for forage quality than the species used. That said, most farmers prefer to use winter triticale. Wheat produces the least amount of forage but may be used simply because of seed availability. Rye is the traditional but application of any nitrogen over 50 lbs tends to make the crop go flat on the ground. Triticale is the only winter grain that has sustained breeding for high forage digestibility and yield in the Northeast. It is shorter than rye by at least a foot, but the higher tillering density produces yield that are 25 to 35% higher than rye without the lodging.