Winter is a time to do planning for the upcoming year, as well as goal setting and laying the groundwork for future plans on your farm. This article is going to cover some thoughts I have on fence construction, farm planning, and pose questions to ask when you are considering making some changes to your operation.

A farm that integrates a forage-grazing based system can be very beneficial to livestock, the land and the operator. Whether you are a seasoned grazier or just starting to intensify your forage operation, there are many options to consider. Two questions you need to ask are, “What economic benefit will I gain or what problems will I solve with the changes I am planning to make.” “What are my goals (business & personal)?”

You must be flexible and open minded. Consider soil types, available resources (such as water, existing forages, labor, etc.), and think in terms of net gain. Be creative, resourceful, and innovative. Search out information and always be willing to listen. Other questions to consider: “Where is the market for my product? Does my product fit the market I am targeting? Am I adding as much value to my product as I can without passing the point of diminishing returns?”

Today, with the wide array of fencing components and water systems available, there are opportunities to try practices that were not economically feasible several years ago. When I am building fence on our farm, I try to consider what I will gain from the fence through time or labor savings, better utilization of forages, or something as simple as traffic pattern of my cows. It is always easier to let my cows go the way they want rather than try to force them my way. Think about access lane locations and gates. (I have never complained about having a gate too wide).

Perimeter fences must be in excellent condition and well maintained. The perimeter fences are excellent for carrying power to divider fences in your paddocks. Don’t skimp on quality when it comes to your fencing components. Fencing supplies, chargers, and watering systems are an integral part of your system.

continued on next page
Always follow manufacturer’s recommendations on grounding your fence chargers; (I use 3 feet per joule with rods 10 feet apart) and always use lightning arresters. The heart of an electric fence system is proper grounding.

Use your fence to match paddock size to the forage needs of your animals and to maintain proper stocking density to get the most from what you have available. Ample time for regrowth in your paddocks is critical to managing your grass. I like to use portable interior fences, which allows me more flexibility. When building permanent interior fences, consider using polywire for a short time to make sure the fence location will work into any long term plans you have. If you are going to do the fence construction yourself, but lack experience, look to a reputable supplier for ideas on construction. Gallagher Power Fence has a great handout on fencing tips. Consider the distance your animals need to travel to water, your soil types, and terrain. Make plans for both dry and wet conditions in your overall grazing plan. When constructing fence, consider shade access for hot humid days, flash grazing stream banks, and other unique challenges in your operation. When burying hook-up wire under gates, use 12 ½ ga underground insulated wire inserted through plastic pipe. Build some fence each year as apart of your whole farm plan. Don’t be afraid to ask questions of salespeople, forage specialists, University and Extension Educators, NRCS, as well as experienced graziers in your area. Try something new each year, such as using annuals to fill in forage gaps between seasons, multi-species grazing or creep grazing calves in front of their mothers. Frost seed improved varieties of red and/or white clover, and maintain fertility levels for optimum production. Put some thought into your forage seed selection the same as you would corn or beans. Remember it takes time and patience to develop good, productive pastures.

Some closing thoughts; manage the whole farm, keep good records, reduce and manage risk, and watch for unique marketing opportunities. Clipping pastures helps to keep plants growing and keeps weeds down. Animals perform better on dense, high-quality pastures grazed at 9 inches down to 4 inches rather than a 15-inch, more mature pasture. Remember not to throw the gate chain over the hotwire when closing the gate. Good fences have the tendency to make good neighbors. Finally, remember that your family is the single most important part of your farm.

January 19 & 20  Heart of America Grazing Conference  Wilmington, Ohio
February 4  Northern Indiana Grazing Conference  Shipshewana, Indiana
June 23  Forage Field Day  Logansport, Indiana
This is a day-long, hands-on workshop designed to assist forage producers in decision-making opportunities. It is filled with educational activities and some small group settings.

Sept. 8  Forage Management Day  Purdue Agronomy Farm, West Lafayette-
This is a day-long, hands-on workshop designed to assist forage producers in making decisions that will increase yields and profitability.

The fourth annual Heart of America Grazing Conference is scheduled for January 19 and 20, 2005, at the Roberts Conference Centre near Wilmington, Ohio. The conference center is at exit 50 on Interstate 71.

The conference brings together producers, industry representatives and agency specialists from Illinois, Indiana, Kentucky, Missouri and Ohio. The Heart of America Grazing Conference this year will include a tour of the Wilmington College grazing operation. Their operation includes beef cattle, sheep and meat goats. Different fencing, watering facilities and forage species will be observed during the tour. The tour will also include a grazing demonstration plot of stockpiled tall fescue with different rates of nitrogen with and without the use of Agrotain, a nitrogen enzyme inhibitor.

The Wednesday program will also include a demonstration and hands-on workshop on low stress animal handling. Steve Cote author of “Stockmanship – A Powerful Tool for Grazing Lands Management” will lead everyone at Wilmington College Equine Arena in the proper way of handling, moving, and working livestock. The evening will end with a dinner. Dave Zartman has been invited to address the crowd on the future of forage based agriculture in the United States.

The Thursday program includes a trade show and morning sessions on “The Lasting Effects of Endophyte on Animals,” “Grazing Systems and Streams,” “Optimizing Grazing Lands” and “Stockmanship – A Powerful Tool for Grazing Land Management.” The afternoon portion of the program will include break-out sessions for dairy, beef, horse, sheep and goats. New at this conference is a session on pasture raised pork. These sessions provide an opportunity for producers to visit with other producers and agency and university specialists.

The trade show will be open on Wednesday and all day Thursday for producers to talk with suppliers of seed, fence and other equipment used on grazing farms.

The cost of the conference will be $45 for the Early-Bird Special until January 9, 2005, then $60. The one-day registration for January 19 is $20 before January 9 and $25 after. The January 20 only registration is $25 before January 9 and $35 after January 9, 2005. The registration includes meals and all program materials.

Conference information is on the OSU Forage Team web page at: http://forages.osu.edu/ For registration material contact Bob Hendershot by phone at 740-653-1559 or email (bob.hendershot@oh.usda.gov) or Jeff McCutcheon at 740-397-0401 (mccutcheon.30@osu.edu). Rooms are available at the adjoining Ramada Plaza Hotel at a special rate for the Heart of America Grazing Conference.

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The conference is sponsored by the Ohio State University Forage Team, Ohio Farm Science, Land-Grant Universities on Northern Great Plains, National Grasslands Network, National Resources Conservation Service, Ohio Grazing Network, Ohio Forage Crops Association, OSU Agronomy Farm, and SKM, Inc. It is scheduled for January 19 & 20, 2005, at the Roberts Conference Centre near Wilmington, Ohio. The conference center is at exit 50 on Interstate 71.

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Management-intensive Grazing

Susannah Hole, SE Indiana Grazingland Specialist, NRCS

A Management-intensive Grazing (MiG) system is a term that has been thrown around recently and that maybe has not been well defined. It is vital to understand that the intensity is in the management and not in the grazing. This means that your role in the operation is intensifying, not the animals. The level of increased management is a planning decision that you must make. Your specific operation and the amount of time and other resources you have available then determine the level of management.

There are all levels of management. The simplest can be a 2-paddock system where animals are moved every few weeks. The upper end of the spectrum can be the grazing dairy farmer who is moving animals to a new patch of grass every 4 hours. The cow-calf grazer cannot justify the time of the 4-hour rotation and the dairyman cannot make a living on the 2-week system. They have different requirements and resources. You must know your resources to know where you fit in that range.

For the cow-calf operation the optimum rotation is 5-7 days; for stockers it is 1-3 days; for sheep it is 2-5 and the dairy is 1/2 to 1 day. Realize these are optimum; any increase from your current system is a step in the right direction.

When graziers think about adding legumes to the grass pastures, they may think that a no-till drill is a necessity. That is not always the case.

Legumes can be broadcast onto a grass pasture with a tractor-mounted seeder or an ATV-mounted seeder. One minimum-tillage pass may precede the seeding, but seed incorporation is achieved naturally by the soil freezing and thawing or by livestock trampling.

Timing is quite critical. Late winter or early spring seedings have a high degree of success. Sectional turnover time is a good target. The seed must be on the soil in time for freezing and thawing to create the seed to soil contact.

If perennial weed control is needed, it should be done the previous growing season.

Soil testing should also be done prior to seeding. Lime and fertilizer should be applied.

Graze the existing grasses heavily prior to freeze-up.

Tillage is not a necessity, but if it is done the sod should be disturbed 50-70 percent. Don’t overdo it on rolling terrain. Broadcast seeding will work on steep slopes if the grasses are grazed very closely.

“Hoofing the seed in” can be an acceptable seed incorporation method. A heavy concentration of animals helps to insure success.

Begin grazing the renovated pasture when the grass is four inches tall. At that height the legumes will probably be one to one and a half inches tall. This early, regulated grazing is necessary in order to keep the grass from out competing the legume. If grazing cannot be done at that time, clipping will be necessary.

Remove the animals when they begin to eat the legumes. Rest the pasture for eight to ten weeks. This early, regulated grazing is necessary in order to keep the grass from out competing the legume. If grazing cannot be done at that time, clipping will be necessary.

Continue to rotationally graze the improved pasture for the life of the legume. The soil test results may suggest that applications of phosphorus and potassium may be needed to sustain productivity.

Incorporating a legume into pastureland reduces the need for nitrogen fertilizer, improves pasture yield and quality, plus it provides a more even distribution of forage throughout the growing season.
Stream Crossings
Dan Undersander and Brian Pillsbury, Wisconsin

A stream crossing allows a grazier to control where the livestock will cross and where they will drink. If livestock are already grazing streamside paddocks, they have probably chosen a spot to cross. This is generally the best place to put the crossing. Improving this spot with a focus on livestock convenience will encourage them to use it. If the streambed is composed of coarse gravel, it may not be necessary to build a crossing.

Livestock look for two basic things when crossing a stream or approaching it to drink: they need to be able to see the bottom and they need a firm bed to walk on. Most animals will avoid soft, muddy areas and rocky areas whenever possible. We can use these tendencies to minimize damage to the streambed.

The primary component of a stream crossing is a layer of gravel thick enough to support the weight of the animals. The size of the gravel or aggregate affects how long the livestock spend in the crossing. Aggregate with 1.5-inch diameter is large enough that it is uncomfortable underfoot, and the animals will not be tempted to stand around in the water but not so large as to keep animals off. This assumes that the stream is moving slowly enough that this size aggregate will not be washed away. If the streambed is unstable, place a layer of fiber cloth (geotextile) under the rock base. This is especially useful when springs are near the crossing.

Select a site where minimal stream bank damage will occur. Look for an area with a gentle slope, shallow, slow moving water and a firm base.

The crossing should be at least ten feet wide.

The ramp slope should be no greater than four horizontal to one vertical.

The base of the crossing should be at least 18 inches; this could be crushed (angular) or quarry-run rock. Only nine inches of rock are needed if a geotextile base is used below the rock. Rock size required will depend on velocity of the stream. If the stream speed dictates using rock larger than 1.5 inches, switch to rounded stone or else livestock will avoid the crossing.

How fast is the stream flowing? Stream flow rates are difficult to determine because of great variation along any length of stream. Flow rates vary inversely with stream width (the narrower the stream, the faster the flow). However, for purposes of managing the stream, things can be simplified to whether the flow rate is faster or slower than 1 foot per second. To determine flow rate, put a floating item such as a piece of wood on the stream and measure how long it takes to travel 10 feet. If it takes less than 10 seconds, the stream is a fast stream and should be treated carefully to reduce erosion potential. If the item takes more than 10 seconds to travel 10 feet, the stream is a slow stream with reduced management requirements.

Graziers’ Comments
Ed Heckman
“If you are fully committed to a myriad of daily tasks...you won’t have the time to be proactive in managing change.” Dave Smith

“Vision is having an acute sense of the possible. It is seeing what others don’t see. And when those with similar vision are drawn together, something extraordinary occurs.” James Ryan, Penn State University

“We, as dairymen, focus on P and K soil levels to achieve adequately high energy levels from our forages.” Dick Conklin

Indiana has about 1 million acres of grazing land; the United States has about 860 million public and private acres devoted to grazing. This is more than any other single land type. Ag Census

“If a plant is to withstand grazing, it must combine resistance to treading with resistance to frequent defoliation close to the ground.” Andre Voison

People, despite their artistic pretensions, their sophistication and many accomplishments, owe the fact of their existence to a 6 inch layer of topsoil and the fact that it rains. Anonymous

“If you sell hay or grain, you sell soil fertility. If you sell beef or milk, you sell mostly water.” David Kline

“Walk More, Worry less, Work Less and Make More Money.” Ontario Graziers’ Creed

“Learn from the success and mistakes of other. It is cheaper that way.” Dave Gneiser

Triticale is ready for grazing earlier in the fall than wheat, rye, or barley.

Successful grazing management depends on introducing change in small increments.

“The idea behind water in every paddock is to get the cows to step away from the grass individually for a moment many times a day for a quick drink of water. Dairy cows will not drink enough water from a creek to milk more than about 50 pounds.” F.W. Owen

“The time and labor that go into an intensive grazing program are different from the requirements of a confinement system. Concerns about walkways, building, maintaining, and moving fences and watering systems are part of the management decisions that are different. Many of us find moving animals or fences more enjoyable than scraping and spreading manure.” Ron Florence
Some Tips For Growing The Forage Base

If cow-herd expansion is in your plans, what is the first thing to do to provide more pasture? Should you rent or buy additional acres, add legumes and/or fertilizer to increase production, or perhaps increase the number of paddocks?

“Traditionally, we think more land for more grass but, depending on current sophistication of the grazing system, inputs into existing systems might be cheaper than land acquisition,” says Dan Morrical. The Iowa State University professor of animal science offers this advice on the Iowa Beef Center Web site:

The first action in growing more forage is to plant fence posts for additional cross fencing to improve grazing management,” Morrical quips. “Increasing the number of paddocks is the first option to evaluate toward increasing the grazing management. Rotational grazing will result in a 25-50% increase in forage productivity. Adding cows also means more winter feed, so that portion of the operation also needs to be evaluated.

The next step is to evaluate the fertility program for pasture acres. Start by soil testing to determine N, P, K and limestone levels.

Adding P, K, and limestone as determined by soils test, is another way of growing more legumes and grass. Fertility management changes could also include mid- to late-summer nitrogen applications.

Operations with excess spring forage may benefit from delayed nitrogen applications. For example, instead of applying 50 lbs. of N in early Spring, split an application that includes half in early spring and the other half by mid June, or 50 lbs. in early June and early August. These later applications will help maintain more summer growth of cool-season grasses. Additionally, Morrical says it may be possible to run more cows if acres dedicated to hay can be shifted to grazing.

From Beef-Cow/Calf Weekly

I love to sit and watch the honeybees work for me in my white clover pastures. The earthworm is one of the major saviours of life on earth. Annual soil tillage contributes to the buildup of greenhouse gases, notably carbon dioxide. Score one for pastures!!!! Don’t do anything you can get a cow to do for you. When a pasture farmer makes a paradise for farm animals, he also makes a paradise for wildlife. Gene Logsdon

All programs and services of the Hamilton County Soil and Water Conservation District are offered on a nondiscriminatory basis without regard to race, color, religion, sex, age, marital status or disability.
Sudangrass can be used in many ways. Sorghum-sudangrass is a summer-annual grass hybrid where a forage sorghum is the female parent and a sudangrass is the male parent.

Why should sorghum-sudangrass be considered in my grazing system?

In the Eastern Corn Belt and upper North Central States in the USA, I believe that this forage species is a niche crop and not the base forage in a grazing system. I strongly believe that a high quality perennial forage should be the base forage as it does not require annual seedbed preparation and seed cost investment, or the potential annual frustration of getting the seeding done in timely fashion. This said, I do believe, however, that annual crops such as sorghum-sudangrass are underutilized in most grazing systems.

Ruminant livestock producers can utilize sorghum-sudangrass as a niche crop in many ways. Sorghum-sudangrass can be used:

1. in dry years or when supplemental forage is needed in quick fashion,
2. when transitioning from endophyte-infected tall fescue to an improved forage in the pasture,
3. as an intervening forage between a previous alfalfa crop and a new alfalfa crop to eliminate concern of autotoxicity,
4. in a feedlot that is not utilized during the summer,
5. or in winter hay-feeding areas damaged by daily high concentration of livestock.

What is sorghum-sudangrass?

Sorghum-sudangrass is a summer-annual grass hybrid. It is the cross of a forage sorghum and a sudangrass. The forage sorghum is the female parent and the sudangrass is the male parent. A hybrid where a forage sorghum is the female parent and a sudangrass is the male parent.

What is a “midrib”?

Most grass plants have a very obvious vein in the leaf blade that extends from the base of the leaf to its tip. This vein is called a midrib.

What is the significance of the color brown?

Grass midribs are typically a whitish green color. Mutations of corn, sorghum and pearl millet have been identified that result in a brown midrib. The significance of the mutation is that plant tissues have less lignin than normal tissues. The brown color is also obvious in the stem, especially in cross section.

What is lignin?

Lignin is a compound with no predetermined order. It is formed with multiple reactions involving phenolic compounds (hydroxyl derivatives of aromatic hydrocarbons). It forms covalent cross-linkages with hemicellulose, but not with cellulose. These three compounds, hemicellulose, cellulose, and lignin, are the components of plant cell walls.

Why is lignin important?

Lignin content increases as a plant matures and is thought to provide the structure necessary to help a plant grow erect. Whereas lignin might hold a plant erect, too much lignin results in less intake of forage by the consuming animal and reduced cell wall digestibility. The mutation associated with the brown midrib trait results in a change in enzyme activity associated with the process of lignin formation. Less lignin and the chemical attributes of lignin occur with the mutation.

Brown midrib sorghums are available.

Several sorghum-sudangrass and forage sorghum hybrids have been and are being developed by several seed companies in Texas. Production Plus + Seeds, located in Plainview, TX, were the first seed company to release a brown-midrib sorghum-sudangrass to the public. They released ‘NutriPlus BMR’ brown-midrib sorghum-sudangrass in 1996.

Brown-midrib sorghums do not have the concern of less dry matter yield as compared to normal sorghum hybrids which as been a consistent concern with brown-midrib corn hybrids (Mike Northcutt, personal communication).

Improved palatability observed.

Non-lactating ewes had free choice pasture of ‘NutriPlus BMR’ or a normal sorghum-sudangrass at the Purdue University Agronomy Research Center, West Lafayette, Indiana in 1998. I was impressed with how ewes would graze the lower stem of the brown-midrib hybrid in preference to leaf tissue of a normal hybrid. These observations resulted in similar demonstrations at several Indiana sites in 1999.

The most unique demonstration in 1999 was seeding a letter “P”, for Purdue, with a normal sorghum-sudangrass hybrid and the area around the “P” and the hole of the “P” with ‘NutriPlus BMR’. After several days of grazing the area with non-lactating ewes, the “P” began to appear. The last brown-midrib region to be grazed was the hole of the “P”. The clear definition of preference for the brown-midrib hybrid in the hole of the “P” without grazing the normal hybrid immediately adjacent to hole of the “P” was especially intriguing.

What about animal performance?

Performance trials were conducted in 1999 with beef replacement heifers at Feldun-Purdue Agricultural Center, Bedford, Indiana, and with beef cows and their nursing calves at the Southern Indiana Purdue Agricultural Center located near Dubois, Indiana.

Replacement heifers weighing 1005 lbs. at the beginning of the trial (4 August) gained .46 lb. per day and lost .16 lb. per day when grazing the brown midrib and normal hybrids, respectively, over the 43-day trial.

Dry weather made hay supplementation necessary over most of the cow-calf trial, but there was an improved response to the brown-midrib sorghum-sudangrass. Average daily gains of calves were 2.30 and 2.10 lbs. when grazing the brown-midrib hybrid and the normal hybrid, respectively. Over the 88-day trial, cows gained 142 and 116 lbs. on the supplemented brown-midrib hybrid and normal hybrid pastures, respectively.

Based on my experiences with ‘NutriPlus BMR’ brown-midrib sorghum-sudangrass, I believe that its use provides an opportunity of improved animal performance as compared to a normal sorghum-sudangrass hybrid.

Where can seed be found in the region?

Do your homework as you seek information about brown-midrib sorghum hybrids from seed suppliers. As with any other crop, distinct differences in yield potential, quality, lodging, and other attributes do occur with different brown-midrib sorghum hybrids. My experiences have only been with ‘NutriPlus BMR’ brown-midrib sorghum-sudangrass.