Late-Winter Legume Seeding

It is never too early to begin the planning process that focuses on spring pasture improvement. One of the most cost effective pasture improvement practices is adding legumes onto grass-dominant pastures. Legumes can provide free "fixed" nitrogen for the grass pasture as well as provide livestock with a nutritional boost. Red clover is the most common legume for this purpose, although birdsfoot trefoil, white clover, and lespedeza can also be used successfully. The clovers tend to be more tolerant of cold temperatures in the seedling stage, thus they are more adapted frost seeding.

Broadcasting/frostseeding/overseeding legume seed is a very effective method for renovating pastures and more cost effective than drilling, according to Dave Trotter, Clark County, IN, Extension Educator. Broadcast inoculated seed in late February though mid-March. The natural freezing and thawing action of the soil will incorporate the seeds into the soil. It is recommended that the seeding be done when the ground is "honeycombing" in the morning hours of late winter and early spring days.

The renovated pasture will be ready for a light grazing when the grass is about 4 inches tall, at which time the legume seedlings should be about 1 ½ inches tall. This will occur somewhere in the six week range. This will give the plant’s root system a chance to become established. Early grazing or clipping will prevent the grass from out-competing the legume. Once the legume is well established, implement a rotational grazing system that includes a 4-week rest period.

Legumes can increase forage yields by up to two tons per acre. Legumes can improve soil tilth by creating deep root channels, which also improves soil drainage and the amount of air in the soil.

Hoos-Your Grazing Network

Winter 2008 - 2009

JANUARY 21-22: THE HEART OF AMERICA GRAZING CONFERENCE

The five-state Heart of America Grazing Conference will offer producers an opportunity to gain information on the advantages of improved grazing systems. Purdue Extension and other Indiana organizations will join with Illinois, Kentucky, Missouri, and Ohio organizations to sponsor the event. The conference will be held at the Holiday Inn Conference Center in Columbus, IN on January 21 and 22, 2009.

Registration and a tradeshow will start at 4 p.m. EST on January 21. A 6:30 p.m. banquet will be followed by the conference’s keynote speaker, Joel Salatin of Polyface, Inc. Salatin will discuss his farm operation which includes the raising and marketing of “Salad Bar Beef, Pigaerator Pork, Pastured Poultry (eggs, broilers, and turkeys), Forage-Based Rabbits, and Forestry Products.

The second day of the conference starts at 8:30 a.m. Topics offered include forage growth and development, ultra-high stock density grazing, getting started in management-intensive grazing, and improving the existing management-intensive grazing system. Following lunch there will be breakout sessions discussing marketing of farm-raised products, utilizing sheep and goats in the grazing environment, economic flexibility in grazing stocker calves or replacement heifers, and alternative forages.

There also will be exhibitor booths on display throughout the two-day event showcasing fencing and livestock watering supplies, pasture irrigation, seed, minerals, and livestock medications.

Individuals may register for the event -- $75 for both days or $50 for one day. This fee covers all program materials and meals. A registration brochure is available at www.agry.purdue.edu/ext/forages. Lodging is available at the Holiday Inn for $79 per night per room plus tax. Hotel reservations can be made by calling 812-372-1541 and participants should indicate that they are with the Heart of America Grazing Conference. For more information contact Brad Shelton of Purdue Extension – Washington County, 806 Martinsburg Rd, Suite 104 Salem, IN 47167; 812 883-4601 or sheltonb@purdue.edu.

Purdue University is an equal opportunity/equal access university. If you have special needs call us prior to the event at 812-883-4601 or call 888-EXT-INFO and ask for the Washington County office.
Amazing Grazing
How sweet the sound!

To sum up the how-to and benefits of intensive grazing management, Marathon, New York, dairyman, Dick Warner, composed this poem – set to the tune of the hymn Amazing Grace.

Amazing grazing, too simple it seems,
To use the grass that’s free.
But costs were up, and profits down,
So now the light I’ve seen.

Dividing land around the barn,
Into paddocks, large then small.
The object is to keep the cows
On grass six inches tall.

With several rubber water tanks,
And some plastic pipe we’ve laid,
We’ve found fresh water availability,
To be more important than shade.

We’ve moved the cows at intervals,
No longer than a day.
If paddocks get over twelve inches tall,
Make them into hay.

Amazing grazing, too simple it seems,
But I know it works for me.

Ralph’s Rules
Ralph Quillin, Paris, Kentucky

There are some very simple rules to follow when it comes to planning and using a portable pasture watering system.

1 – Cattle need to have easy access to water; 500 – 700 feet is a suggested minimum travel distance. Travel distance greater than this will cause the animals to graze closer to the tank and when they do move away from the tank, they will come to water in a group. Close proximity to water allows the animals to graze and drink singly throughout the day, rather than going to water in mobs and less frequently.

2 – Five gallons of water per minute should be the flow at the water tank. Proper design can help deliver this flow rate. If the flow rate is lower, a larger tank should be used.

3 - Place your watering tank under an energized fence line. Allow 2/3 of the tank to extend into the paddock and place the valve and supply hose away from the animals and under the wire. This prevents crowding. Only two animals can drink at a time. If a third one tries to bully in, someone is pushed into the hot wire and all three animals get shocked. Placing a tank out in the paddock is a sure recipe for failure. Crowding occurs without the control provided by the electric fence and the water supply is likely to be cut off by a hoof standing on the supply hose. Bring a repair valve to the field with you.

With these basic rules you can water a large group of animals from some very small watering tanks. There are always situations that require additional management, but using the above rules as a guide, should make taking water to cows so simple that children can do it.

Graziers’ Comments
Ed Heckman

If you can, set aside a piece of pasture, take a soil test, meet the recommendations and see what grows there.
Dick Conklin, New York

Accomplish the great task by accomplishing a series of small acts. Tao Te Ching

So many people pull their open beef cows at pregnancy-checking time when they wean, and that’s when they’re pulled down the furthest and the least saleable. If you weigh your cows at weaning time, in a 30-day period, they’ll pull down on 75 – 90 pounds. Bill Roden, CA.

Small paddocks and a shorter distance to water that is found in rotational grazing systems improve manure distribution. Manure is more evenly distributed at higher stocking densities. When the travel area of the animal is restricted, grazing and manure distribution are enhanced.
University of Kentucky ID-143

A single strand of electrified fence over a stream works well for us; it is very easy to replace after a flood. Charles Bryson, NC

Dandelions may be an indication of low pH. Vaughn Jones, NZ

I throw ryegrass onto bare spots as I walk my paddocks. I know graziers who toss red clover, white clover, or birdsfoot trefoil in “light” legume areas. Dave Gneisner, WI

What ends up growing on a given patch of ground is more strongly influenced by subsequent history and the attributes of that ground than by the seed distribution. What will survive there a year or two after seeding is almost independent of seeding rate. Ann Clark, Guelph, Ontario

One way to get animals to consume low-quality, stored forage is to spray it with a mixture of molasses and water. Spray only the amount you wish for them to consume in a day. The cost is minimal. Cane molasses or blackstrap, if available, can also be used. Burt Smith, HI

Our pasture program has done what we wanted it to do. It has lowered our feed costs. More importantly, it has allowed us to expand our numbers without having to invest in more buildings and equipment. Jodi and Ron Snyder, PA

This newsletter is financially supported by Grazing Systems Supply, CISCO Companies, and the Grazing Lands Conservation Initiative (GLCI). The mission of GLCI is to provide high quality technical assistance on privately owned grazing lands on a voluntary basis and to increase awareness of the importance of grazing land resources. A coalition of individuals, livestock organizations’ representatives and agency personnel carry out the activities of this volunteer organization.

A big thank you is offered to this organization and these agribusinesses for their interest and support of this grazing activity.
Drill Calibration

Ed Heckman

One method of drill calibration is to count the number of seeds dropped per foot by the drill. This can be done by running the equipment over hard ground or a canvas at normal operating speed. Adjust drill openings and repeat until the count per foot corresponds to the seeding rate that is desired.

Set the lever on the number that you believe to be the correct setting, stand back and let someone drive the equipment over a canvas with the openers raised so they do not cut the canvas. Seed should flow out and fall on the canvas. One foot squares can be drawn on the canvas to assist the counting process. Otherwise, stand on the canvas, put your heels together to make a right angle and count the seeds in that one-foot square between your big toes. If you have the number of seeds in your seeding rate, congratulations! If not, choose another number setting and run through the procedure again. It usually takes three tries to get a good accurate rate. To get a really precise rate may take five tries.

Another method that is less practical but more accurate is to collect 3 tubes on each section of the drill. This is done by running the drill at normal operating speed over a known distance, weighing the seed, and computing the seeding rate. Good gram scales are required.

Estimates can be made for per linear foot drill row seeding rate by using this formula:

\[
\text{Seeds per pound} \times \text{seeding rate per acre} \quad \frac{\text{43560}}{(43560 \times 2) \text{ for 6" spacing}} = \text{seeds per linear foot of drill row}
\]

Estimates can be made for square foot seeding rate by using this formula:

\[
\frac{\text{Seeds per pound} \times \text{seeding rate per acre}}{43560} = \text{seeds per square foot}
\]

Amount of Seed

Seeding Rate = \frac{\text{Seeds per pound} \times \text{seeding rate per acre}}{\text{Area covered in acres}}

Seeds per pound for forages can be found in Purdue Agronomy leaflet AY – 253 at your Extension office or at the Purdue Forage Web Site. www.agry.purdue.edu/ext/forages/publications/ay253.htm

2009 NORTHERN INDIANA GRAZING CONFERENCE

The Northern Indiana Grazing Conference will be held in the Antique Auction Barn at Shipshewana, Indiana, on Friday, February 6, 2009. The theme for this year’s conference is “Grazing Management for Small Farms”.

Speakers for this year include:
- Ruth & Dan Vosberg, Dairy Grazing in Wisconsin
- Jim Gardner, Otsego, New York – Calf Raising & Low or no grain for dairy cows
- Samuel Fisher, Marshall, Indiana – Manage Grass Species
- Joel McNair, Graze Magazine – Why the Future Belongs to the Small and the Sustainable
- David Kline, Fredricksburg – Sustaining the Family Farm & Current Economic Climate
- Panel members – Marlin Eash, Ray Yoder and Steve Nisley sharing their “Family Grazing Experiences”
- Tim Clark, Goshen, Indiana – Marketing Goat Meat and Milk
- Mahlon Miller, Middlebury, Indiana – Pastured Poultry

The evening session – “Growing up on a Grazing Farm” - will feature David Kline and a youth panel sharing their roles and responsibilities on the family farm. David Kline with Farming Magazine will moderate the evening session and then wrap the evening up with an inspirational talk on “Sustaining the Family Farm”. Youth panel members include Leon Helmuth, Lisa & Katrina Hooley, and Bryan and Kevin Eash.

The conference will begin with registration at 7:00 a.m. and the welcome at 8:00 a.m. The daytime portion of the conference will be completed at 4:00 p.m., with the evening session beginning at 6:00 p.m. and lasting until 8:00 p.m. Registration fee is $30.00 for the first person on the farm and $20.00 for each additional person. Registration deadline is January 23. On site or late registration increases to $35 per person and $20 for each additional person on the farm. For a complete registration form, contact the Lagrange C. SWCD at 260-463-3471 ext 3.

If there are inaccuracies in your address label or if your circumstances have changed and you no longer want to receive this newsletter, please notify Ed Heckman by using one of these three methods: 317 272-0732; btrefoil@yahoo.com, or 1211 Wood Sage Dr., Avon, IN 46123 - 7401. In addition, if you would like to receive this newsletter electronically or if you want to add someone to the mailing list, use the same methods to contact Ed.

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.
Brassicas
Ohio State Extension Service

Forage brassicas are high quality, high yielding, fast growing crops that are particularly suitable for grazing by livestock. Both tops and bulbs can be grazed, and they are very nutritious. Brassicas can be seeded from mid-April through May for summer grazing or in July or August for fall/winter grazing. All members of the brassica family -- turnips, rape, kale, and swedes -- produce forage of exceptionally high (often 85-95 percent) digestibility.

Brassicas are very high in crude protein and energy, but they are extremely low in fiber. Their low fiber content results in rumen action similar to when concentrates are fed; thus there is a need for proper roughage supplementation. Brassicas, therefore, should never comprise more than two-thirds of the forage portion of livestock diets with the remainder provided by grass hay or stockpiled pasture.

Strip grazing, where forage is rationed every day or two, provides the efficient usage. Rape, kale, and mustard have regrowth potential, if they are not grazed below six inches. Turnips will regrow, if the growing point at the top of the bulb is not removed.

Brassicas can be no-tilled into pastures at lower rates, so a mixture of brassicas and grass is available for grazing. This retains the sod to protect the soil during the winter and assists in reducing mud problems during wet periods.

Brassicas offer a means for some graziers to produce high quality forage during the critical summer time period of slowed pasture growth and/or to extend grazing into the late fall-early winter period.

Grazing Systems Supply, Inc.

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Farmers Should Consider Rotational Grazing

Researchers have been working on more efficient ways of grazing livestock. The traditional way is continuous grazing, which is letting livestock graze on one piece of land, where they have free access during the grazing period.

Rotational grazing is being reconsidered, because there are very good fencing and watering materials that are available. Rotational grazing involves alternating periods of grazing and rest among two or more paddocks in a pasture during the grazing period.

Rotational grazing does have some considerations. First, the work is of a different nature. Livestock must be moved from paddock to paddock. This must be compared to the time it takes to bale the hay that is needed from low-producing, continuously grazed pastures. There are also extra costs, such as more management time, fencing materials, and watering equipment. More time is needed to determine the condition of the paddocks and the best management strategy to employ.

There are many advantages, though. The main advantage to rotational grazing is that pasture plants "rest", while their paddocks are not being grazed. Some forage plants such as orchardgrass, alfalfa and red clover need rest to be most productive. With rest they can be more productive than the Kentucky bluegrass and "White Dutch" clover into which many Indiana pastures have evolved.

There are other advantages to rotational grazing. You can start grazing earlier in the spring, because of the rest that paddocks get after grazing periods. You can further extend your grazing season by stockpiling a part of your pasture in late summer to use in autumn and early winter.

Because of increased meat or milk production you can increase your profit per acre. You also should see higher quality forage, because of more legumes in the stand.

Flexibility is very important with rotational grazing systems. You do not have to rotate paddocks on a fixed schedule. When to rotate depends on variables such as weather, stocking rate and forage growth. As long as the forage is four to ten inches tall, you can let your cattle graze there.

The animals’ water and mineral supplies should be as mobile as the animals are. For water, either a piped system or portable tanks will work. A piped system, though, probably would be better for saving labor.

The 2009 Cattle and Forage symposium will be February 27 and 28 at the Indianapolis Hilton North, 8181 North Shadeland Ave. Temple Grandin, Andrew McCrea, Allen Bridges, Dennis Buckmaster, Dan Buskirk, James K. Drackley, Jason Karszes, Lucinda Williams, W. Hess Berg, Governor Mitch Daniels and Dr. Bret Marsh will be speakers at the combined event coordinated by the beef, dairy and forage industries.

Registration is $95.00 until February 2; $125 after February 2.

More information is available at www.indianabeef.org/assn/index.html

STAGES OF A GRAZIER

<table>
<thead>
<tr>
<th>Apprentice Grazier</th>
<th>Journeyman Grazier</th>
<th>Master Grazier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years 1 and 2 – Where Am I Going?</td>
<td>Years 3 and 4 – Now I See!</td>
<td>Years 5+ Years</td>
</tr>
<tr>
<td>1 to 5 paddocks per herd</td>
<td>6 to 10 paddocks per herd</td>
<td>More than 10 paddocks</td>
</tr>
<tr>
<td>Limited access to water</td>
<td>Water is located in laneways</td>
<td>Water in every paddock</td>
</tr>
<tr>
<td>Moves animals erratically and not frequently enough</td>
<td>Moves animals weekly or too long a rotation</td>
<td>Moves animals based on species and forage height</td>
</tr>
<tr>
<td>Wastes pasture</td>
<td>Reduces pasture waste</td>
<td>Eliminates pasture waste; stockpiles and rations</td>
</tr>
<tr>
<td>Believes grass is grass</td>
<td>Sees grass can be improved</td>
<td>Maintains a productive pasture mix</td>
</tr>
<tr>
<td>Treats soil like dirt</td>
<td>Considers soil a resource</td>
<td>Treats soil like the goose that lays the golden egg</td>
</tr>
<tr>
<td>Uses no lime</td>
<td>Limes occasionally</td>
<td>Limes little and often</td>
</tr>
<tr>
<td>Pastures have few, if any, legumes</td>
<td>Pastures have 20% legumes</td>
<td>Pastures have 30% legumes</td>
</tr>
<tr>
<td>Says grass does not need fertilizer</td>
<td>Uses nitrogen only so organic matter declines</td>
<td>Uses less nitrogen and more balanced fertilizers</td>
</tr>
<tr>
<td>Ignores weeds</td>
<td>Realizes that grazing can reduce and control weeds</td>
<td>Controls weeds with drainage and grazing</td>
</tr>
<tr>
<td>Has too few or too many animals</td>
<td>Grazes more animals</td>
<td>Grazes more animals better</td>
</tr>
<tr>
<td>Grazing is work</td>
<td>Less work and fewer mistakes</td>
<td>Little work and minimal mistakes</td>
</tr>
<tr>
<td>Not sustainable</td>
<td>Sustainable</td>
<td>Sustainable, Profitable, and Delightful</td>
</tr>
</tbody>
</table>
Rotational grazing is a pick-me-up for tired pastures

Some pastures could use a little time off, and a rotational grazing system is the perfect R&R, said a Purdue University Extension beef specialist.

Rotational grazing rejuvenates pasture grasses and legumes worn out from constant livestock feeding and traffic, said Ron Lemenager. The system, which allows livestock producers to extend forage supplies or carry more animals per pasture, is growing in popularity, he said.

"Rotational grazing is dividing your grazing area into smaller pastures or cells, or paddocks as they are commonly called," Lemenager said. "The idea here is that you'd like the animals to graze an area for no more than five to seven days, and then let that area recover for about 28-40 days after it has been grazed.

"When you have a rotational grazing system, you can stretch your forage supplies because the plants are healthier and their ability to recover is much, much greater."

In a traditional continuous grazing system, livestock are free to roam pastures, consuming any available forage. Typically, cattle will over-graze younger, more lush forage plants as they regrow but ignore nearby mature forage. The overgrazing weakens younger plants by reducing the leaf area required for photosynthesis and depleting carbohydrate reserves in the roots.

While continuous grazing is still in widespread use, pastures constantly grazed risk poorer regrowth potential and crowding out of desirable grass and legume species by undesirable weeds.

Pastures in a rotational grazing system, on the other hand, are subdivided with fences.

"It's nice to have five to eight cells that you can rotate through," Lemenager said.

Livestock are moved from one paddock to the next. When managed correctly, rotational grazing provides enough forage growth early in the grazing season for producers to harvest feed for later use from one-fourth to one-third of the grazed acreage, Lemenager said.

"After you've made your first cutting off of approximately a third of the land base, you can work that into the grazing cycle in the second or third rotation," he said.

"If you have a continuous grazing system and want to move to a rotational system, begin by splitting your pasture in half so that you have two cells. Then you can take those two cells and split them again."

The number of animals a producer should graze within a cell depends on the paddock's size, as well as the number of grazing cells. An important consideration is how close the paddocks are to water, Lemenager said.

"A key factor as you start to think about dividing your pastures is how far do the animals have to move to water?" he said. "In an ideal world, you'd like to have water within 800 feet of the farthest point in the pasture to maximize grazing efficiency. That gets to be tough in some of our pasture areas, particularly as we get into the summer months when streams and springs stop flowing."

The social habits of cattle herds also can affect how much water cows receive. Because bovines are social creatures, they often follow the herd toward -- or away from -- water sources, Lemenager said. Lead cows and those closest to her usually get as much water as they need. Cows at the end of the line often don't get enough because they leave the water source to follow the lead cow back to pasture or shade.

"Your water resource needs to be an adequate size, so that all animals can drink their fill," Lemenager said. "That probably means that an automatic waterer system for 30 cows and calves is probably not going to be adequate. Consider using a larger tank that holds more volume. When grazing cattle don't drink enough water, forage intake, milk production and weaning weights will be reduced."

Other issues graziers should ponder when switching to rotational grazing include forage mix and fencing. Lemenager recommends a forage mix of 50 percent to 70 percent grass, with legumes making up the remaining 30 percent to 50 percent.

Paddock fences do not have to be elaborate. "You can get by with a single-strand hotwire connected to a wooden post on each end and fiberglass line posts to make it very economical," Lemenager said.

For more information about fencing, visit the Purdue Fencing Information Web site, located at http://www.agry.purdue.edu/ext/forages/rotational/fencing/fencing.html.

For additional information on beef production issues, log onto the Beef @ Purdue Web site, at http://www.ansc.purdue.edu/beef/.

Source: Purdue-Ohio Ag Answers, July 28, 2006