Grazing Management

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Lesson 5

Introduction

Grazing cattle has been a prominent component to raising cattle for centuries. However, recent years have prompted producers to focus more on the financial aspect of their operations. Long term success for any business is to manage for a profit not only in the high years but the low years as well. Realizing this and planning for this are two separate issues. It is not enough to become aware of and identify your goals. You must also develop your plan to attain those goals. This can seem overwhelming at times when looking at the entire operation. However, if we can tackle one component at a time the steps become easier to take as we progress along the path towards success.

As addressed in the Nutrition lesson, feed cost is the largest expense incurred in a livestock operation. Increased awareness to nutrient requirements and commodity markets can help reduce this expense. Another area that offers reduced feed cost opportunity lies within grazing management. As a producer one is continuously searching for ways to reduce costs and/or increase performance. Heightened awareness to grazing can offer such a reduction. In fact, grazing management has been known to effectively reduce feed costs by as much as 50 percent.

This lesson of grazing management will address ways to increase productivity and efficiency of your grazing system. It will briefly review some of the material in the "Pasture Management" home study course [http://www.extension.umn.edu/beef/components/homestudy.htm] but offer more specific information in regards to the stocker and backgrounder operations.

This lesson will address the issues of Grazing Nutrition, Stock Density, Plant Health Management, Extended Grazing, Water Systems, and Fencing Systems.

Grazing Nutrition

Nutrition was covered in the previous lesson and therefore will not be covered in depth with this lesson. However, it is important to note that a grass based feeding system can be utilized with the same performance expectations with minimal supplementation necessary. Table 1 illustrates the composition values of some selected feed stuffs as they can be found in a grazing situation. The table is from the United States-Canadian Tables of Feed Composition, http://www.nap.edu/books/0309032458/html/ , where other forages could be looked up and compared as well. However, these values should only be used as guides. Your forage analysis will vary upon the maturity of plants grazed and several other factors including climate, soil type, plant variety, soil fertility, plant health, and insect infestation to name a few.

Please note in the table that nutrient composition is greatly affected by plant maturity. As the plant matures the nutrient value decreases. Some researchers also note that plant height has an equal impact on forage quality. Therefore, proper timing of animal exposure to each paddock is essential to maintain adequate animal performance.

Table 1: Selected Feed Composition of grazed Forages

Feed Name	International Feed Number	Dry Matter (%)	TDN (%)	DE (%)	ME (%)	NEm (%)	NEg (%)
ALFALFA							
fresh, late vegetative	2-00-151	21.0 100.0	13.0 63.0	0.59 2.78	0.50 2.36	0.30 1.39	0.16 0.75
fresh, early bloom	2-00-184	23.0 100.0	14.0 60.0	0.61 2.65	0.51 1.31	0.30 1.31	0.15 0.65
fresh, mid-bloom	2-00-185	24.0 100.0	14.0 58.0	0.62 2.56	0.52 2.13	0.31 1.26	0.14 0.58
fresh, full bloom	2-00-188	25.0 100.0	14.0 55.0	0.61 2.43	0.50 2.00	0.30 1.19	0.12 0.47
BAHIAGRASS							
fresh	2-00-464	30.0 100.0	16.0 54.0	0.70 2.38	0.58 1.96	0.34 1.16	0.13 0.43
BERMUDAGRASS							
fresh	2-00-712	34.0 100.0	20.0 60.0	0.89 2.65	0.75 2.22	0.44 1.31	0.22 0.65
BLUEGRASS, KENTUCKY							
fresh	2-00-786	35.0 100.0	23.0 64.0	1.00 2.82	0.85 2.40	0.50 1.41	0.28 0.78
fresh, early vegetative	2-00-777	31.0 100.0	22.0 72.0	0.98 3.12	0.85 2.76	0.51 1.64	0.32 1.03
fresh, early bloom	2-00-779	35.0 100.0	24.0 69.0	1.07 3.04	0.92 2.62	0.54 1.55	0.33 0.94
fresh, milk stage	2-00-782	42.0 100.0	27.0 63.0	1.17 2.78	0.99 2.36	0.58 1.39	0.32 0.75
fresh, mature	2-00-784	42.0 10.0	23.0 56.0	1.03 2.47	0.85 2.04	0.50 1.21	0.21 0.51
BLUESTEM							
fresh, early vegetative	2-00-821	27.0 100.0	18.0 68.0	0.80 3.00	0.69 2.58	0.41 1.52	0.24 0.91
fresh, mature	2-00-825	59.0 100.0	31.0 53.0	1.38 2.34	1.13 1.91	0.67 1.14	0.23 0.40
BROME, SMOOTH							
fresh, early vegetative	2-00-956	30.0 100.0	22.0 73.0	0.95 3.22	0.83 2.80	0.49 1.67	0.31 1.06
fresh, mature	2-08-364	55.0 100.0	29.0 53.0	1.28 2.34	1.05 1.91	0.63 1.14	0.22 0.40
CANARYGRASS, REED							
fresh	2-01-113	27.0 100.0	17.0 65.0	0.76 2.87	0.65 2.45	0.38 1.44	0.22 0.82
CLOVER, ALSIKE							
fresh, early vegetative	2-01-314	19.0 100.0	12.0 66.0	0.55 2.91	0.47 2.49	0.28 1.47	0.16 0.85

Feed Name	International Feed Number	Dry Matter (%)	TDN (%)	DE (%)	ME (%)	NEm (%)	NEg (%)
CLOVER, LADINO							
fresh, early vegetative	2-01-380	19.0 100.0	13.0 68.0	0.58 3.00	0.50 2.58	0.30 1.52	0.18 0.91
CLOVER, RED							
fresh, regrowth early vegetative	2-28-255	18.0 100.0	12.0 68.0	0.54 3.00	0.46 2.58	0.27 1.52	0.16 0.91
fresh, early bloom	2-01-428	20.0 100.0	14.0 69.0	0.60 3.04	0.52 2.62	0.31 1.55	0.19 0.94
fresh, full bloom	2-01-429	26.0 100.0	17.0 64.0	0.74 2.82	0.63 2.40	0.37 1.41	0.21 0.78
FESCUE, KENTUCKY							
fresh, vegetative	2-01-902	29.0 100.0	19.0 67.0	0.85 2.91	0.72 2.49	0.43 1.47	0.25 0.85
FESCUE, MEADOW							
fresh, vegetative	2-01-902	29.0 100.0	19.0 67.0	0.85 2.91	0.72 2.49	0.43 1.47	0.25 0.85
ORCHARDGRASS							
fresh, early vegetative	2-03-439	23.0 100.0	17.0 72.0	0.74 3.17	0.64 2.76	0.38 1.64	0.24 1.03
fresh, early bloom	2-03-442	25.0 100.0	16.0 66.0	0.72 2.91	0.62 2.49	0.36 1.47	0.21 0.85
fresh, mid-bloom	2-03-443	31.0 100.0	17.0 57.0	0.77 2.51	0.64 2.09	0.38 1.23	0.17 0.55
fresh, milk stage	2-03-446	35.0 100.0	19.0 53.0	0.82 2.34	0.67 1.91	0.40 1.14	0.14 0.40
RYEGRASS, ITALIAN							
fresh	2-04-073	25.0 100.0	15.0 60.0	0.65 2.65	0.55 2.22	0.32 1.31	0.16 0.65
RYEGRASS, PERENNIAL							
fresh	2-04-086	27.0 100.0	18.0 68.0	0.80 3.00	0.69 2.58	0.41 1.52	0.24 0.91
SORGHUM, SUDANGRASS							
fresh, early vegetative	2-04-484	18.0 100.0	12.0 70.0	0.55 3.09	0.48 2.67	0.28 1.58	0.17 0.97
fresh, mid-bloom	2-04-485	23.0 100.0	14.0 63.0	0.63 2.78	0.54 2.36	0.32 1.39	0.17 0.75
TIMOTHY							
fresh, late vegetative	2-04-903	26.0 100.0	19.0 72.0	0.84 3.17	0.73 2.76	0.43 1.64	0.27 1.03
fresh, mid-bloom	2-04-905	29.0 100.0	18.0 63.0	0.81 2.78	0.69 2.36	0.41 1.39	0.22 0.75

Source: http://books.nap.edu/books/0309032458/html **United States-Canadian Tables of Feed Composition: Nutritional Data for United States and Canadian Feeds, Third Revision** (1982)

Beef production is primarily determined by the consistency of daily intake. This is no different if feeding a silage base diet or a pasture based diet. The three critical variables of daily intake are; 1) amount or quantity available 2) quality or digestibility and 3) composition or palatability. For pasture based diets, forage availability is determined by height, density of sward, and moisture content. Therefore, close monitoring of pasture and performance is essential to boost returns. Some forage guidelines for some of the northern species have been established and are illustrated in Table 2.

Table 2: Forage guidelines:

Use this table as a guide for forage establishment, use, and regrowth					
Forage	**Seeding rate # PLS/acre:**	**Begin grazing**	**Graze no closer than:**	**Cut for hay:**	**Height of regrowth before killing frost:**
Cool season					
Kentucky Bluegrass	15	4-5”	2”	not recommended	4”
Orchardgrass	4	6-8”	4”	boot to early head	6”
Reed Canarygrass	5	8”	4”	early boot	6”
Smooth Bromegrass	16	6-12”	4”	medium to full head	6”
Tall Fescue	10	6-10”	4”	boot to early head	6”
Timothy	3	6-10”	3”	early head	5”
Warm season					
Switchgrass	6	16-20”	6”	early head	6”
Indiangrass	12	12-16”	6”	boot	6”
Big Bluestem	12	10-16”	6”	boot	6”
Legumes					
Birdsfoot trefoil	6	6-10”	4”	early flower	6”
Red clover	8	¼ bloom	2”	¾ to full bloom	8”
Alfalfa	10	full bud	2”	late bud	9”
Notes: Seeding rates can generally be reduced by 25% when grasses are mixed with legumes. *Hay height is for first cutting.*					

Additional information on grazing management is offered under the Healthy Plant Management section of this lesson.

Stock Density

Stock density is defined as the number of animals that can be allotted to a specific paddock based on 1) available forage 2) grazing utilization rate 3) daily intake and 4) length of grazing period. This an essential factor in any grazing system and particularly in a system that reaches for higher performance in their cattle. However, this is an area that should be given more coverage then we have time for in this course. Therefore, we will offer a quick review and encourage you to seek more in depth information on understanding and calculating stock density and carrying capacity from the "Pasture Management" home study course found on the beef team's web site at www.extension.umn.edu/beef or from your local extension service as well as your NRCS offices.

The following material is adapted from Pastures for profit: A guide to rotational grazing and provides a summary and example on calculating stocking rate and acreage needed.

In determining: **How many animals should be put in a pasture?**

One needs to review your goals. If you have a limited amount of pasture land but a flexible herd size, you'll probably benefit from going to a more intensive system. If you don't plan on feeding supplement and/or are more concerned about individual animal gain than gain per acre, you may wish to stock at a lower level.

The calculations below will give a rough estimate of the maximum number of animals that can be grazed on your land.
1) Determine total pasture acreage for the season (example: 20 acres).

2) Estimate average pasture yield per acre on DM basis. Use your own figures if you have them or calculate from records of hay or silage produced of similar fields. (example: 4000 lb/acre).

3) Estimate the length of your grazing season in days (example: May 15 through October 15 or 153 days).

4) Estimate the average weight of one of your animals for the season

$$\text{Average weight} = \frac{(\text{beginning weight} + \text{predicted final weight})}{2}$$

Some average weights:

dairy cow (Holstein) = 1300 lb	stocker = 700 lb
beef cow = 1000 lb	horse = 1250 lb
beef bull = 1250 lb	ewe and lamb = 200 lb

5) Estimate the maximum animal numbers that can be grazed on your pastures during an entire season:

$$\text{Number of animals} = \frac{\text{(total acreage) x (average yield/acre)}}{\text{0.04* x (average weight/animal) x (total days grazed)}}.$$

For example, for a 700 lb steer:

$$\text{Number of animals} = \frac{\text{20 acres x 4000 lb/acre}}{\text{0.04 x 700 lb x 153 days}} = 18 \text{ steers}$$

In determining: **How many acres do my animals need?**
If you have a lot of pasture and a fixed number of livestock, you might want to use a less-intensive system to maximize production per head rather than per acre. The calculations below will tell you the minimum amount of land required to pasture your herd. Remember, you can always use more than the minimum.

The minimum amount of land needed to pasture your herd:

$$\text{Pasture acreage needed} = \frac{\text{(number of animals) x (average weight/animal) x 0.04* x (total days grazed)}}{\text{(average yield/acre)}}$$

For example, if you have 30 backgrounded steers:

$$\text{Pasture acreage needed} \frac{\text{30 steers x 700 lb/steer x 0.04 x 153 days}}{\text{4000 lb/acre}} = 32.13 \text{ acres}$$

*The 0.04 figure is used because livestock need to have daily access to approximately 4% of their live weight in forage (2.5% intake, 0.5% trampling loss, and 1% buffer). This figure may be decreased if you are willing to feed supplemental hay or grain during periods of low production.
These calculations should be used only as guides to help you get started. Actual numbers will vary from site to site and from year to year because of variations in the weather, soil type, and pasture condition.

Healthy Plant Management

When raising stocker cattle, forage quality is essential to achieving high levels of ADG. Adding legumes to your pasture species makeup will dramatically improve the crude protein of the forage as well as maintain the forage quality longer than grasses. In order to establish and maintain legumes in your pastures you may need to adjust your pH accordingly. Each species of grass and legume will grow and flourish better at or above specific pH levels as described in table 3.

Table 3: Minimum pH levels for legume and grass establishment and maintenance

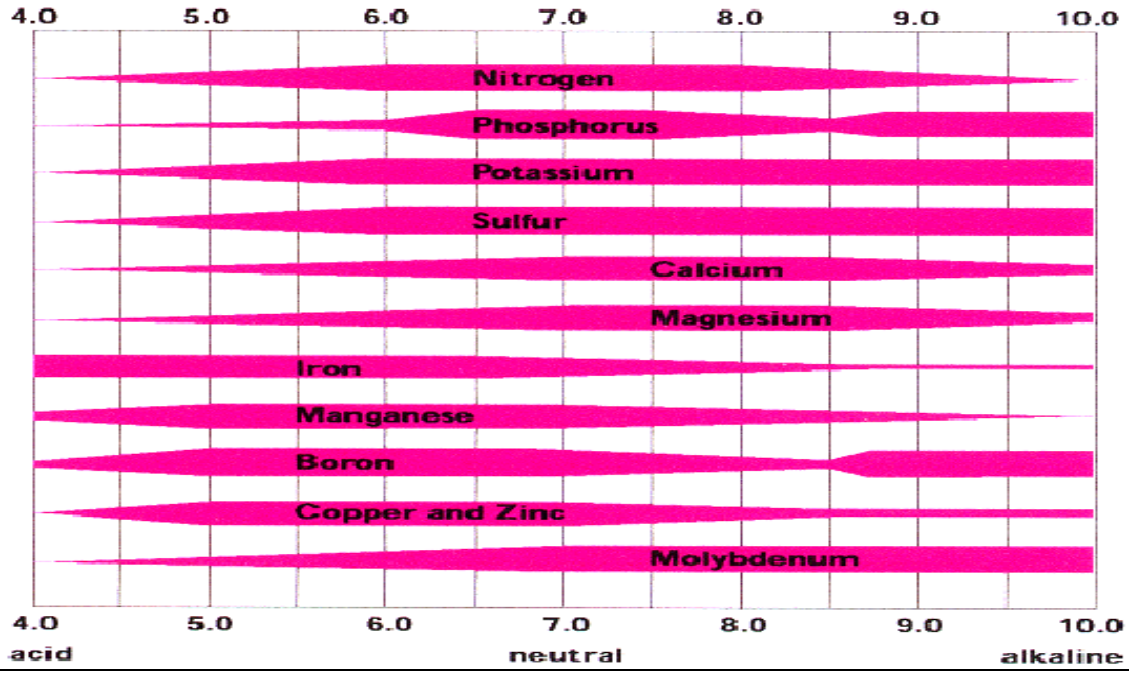
Species	pH
Alfalfa	6.5
Red Clover	6.0
White Clover	5.5
Birdsfoot trefoil	5.5
Grasses	5.5

Source: Missouri Grazing Manual

When selecting species you must first determine what your soil pH is and then consider if you are willing to change it to accommodate the species that you are intending to seed. It is important to understand each of these species have unique characteristics and traits which shouldn't be over looked (i.e. alfalfa doesn't grow well in wet soils, Birdsfoot trefoil doesn't cause bloat etc.) when you decide on the species you would like to have growing in your pastures.

Part of the reason that pH is so important to having legumes grow is that pH has a major bearing on how available nutrients are to the plants as described in figure 1.

Figure 1. Relation of soil pH and nutrient availability. The width of the bars represents relative nutrient availability. The major plant nutrients: nitrogen, phosphorus and potassium, are most available to plants when the soil pH is between 6.5 and 7.0. These nutrients are still present at other pH levels but in forms used less efficiently by plants.
Source: Wisconsin Extension: http://cecommerce.uwex.edu



From this table you can see that a pH of 6.5 -7.0 will provide the most availability to nutrients in the soil. Therefore conducting a soil's test will provide you with a clearer picture of the availability of nutrients in your soil in order to plan more efficiently.

Grazing Management

There are several factors that should be considered with grazing management. Items like body condition scoring, paddock planning, forage sampling and analysis, and pasture topdressing all need to be well thought-out. The decisions should be made in the context of a holistic forage feeding plan that provides alternative options in case your pasture is in short supply or in overabundance. This planning should be done before the grazing season begins to ensure for adequate and quality forage for the entire season.

When grazing stocker cattle it is imperative to be able to provide enough forage to generate animal performance that meets your expectations. This may be an average daily gain (ADG) of 2.5 lbs/day during summer production or 1.5 lbs/day during the course of over wintering. Rotational and or strip grazing is a system that can and does work. This involves the ability to move cattle from one paddock to the next every 3 to 5 days thus allowing rest periods for the portions that are not being grazed. Some

management systems will provide fresh pasture every day. Continuous grazing systems do not allow the necessary rest periods to ensure high forage quality and yields. Rest periods allow the plants to recuperate and renew its energy in the root system for further growth and production.

Once the forages begin to grow they need to be closely monitored to determine yield and quality in predetermining optimum time to graze. Fortunately, there are several tools available to assist in the determination of pasture quality and/or volume. Some of them include pasture rulers, plate meters, and electronic gauges. When utilizing any of these tools remember, as with soil sampling the accuracy is often correlated with the consistency and sampling technique conducted. Remember crop producers can not accurately diagnose the condition of the corn field from the road and neither can beef producers diagnose the forage quality and availability from the ATV. Take the time to monitor your forage conditions. This is the time off-set by not having to harvest and feed your forage mechanically.

Proper pasture and forage assessment is critical to the performance of stocker cattle. There are several benefits of assessment, however the main reasons for assessing pasture are; 1) to match animals' requirements with pasture production; 2) to achieve more precise supplementary feeding; 3) for accurate feed planning; 4) to more effectively manipulate pasture production and composition; 5) to ensure ground cover is sufficient to protect soil from rainwater run-off and to encourage water infiltration into soil.
Pasture assessments also allow producers to look closely at their pastures and identify specific areas where management improvements may be profitable and effective. Rather than a shotgun approach, they allow targeted, specific management. For example, if a pasture has low forage production because the plant species present are not adapted for high production, applying fertility will improve production, but introducing more productive forage species may also be another option for consideration.

In essence, pasture assessments provide producers with information needed to make informed decisions on grazing management. Assessments size up the condition of the pasture and identify strengths and weaknesses so management can be targeted to produce specific results. These repeated pasture assessments help you optimize forage production and evaluate the sustainability of pasture management systems.

Extended Grazing. The ability to increase your days on pasture can greatly reduce the cost of your feeding system. By extending the grazing season producers can decrease their feed bill by $0.28-$0.38 per head per day. Therefore, reducing the winter feeding period by just 50 days results in a savings of $14-$18 per animal. Several producers have been reducing their winter feeding days by as much as 100 days.

When planning to extend the grazing period one must plan accordingly to reduce the risk of plant injury and loss of animal performance. The paddocks that are intended to be grazed at the end of the grazing season need to have sufficient time for the plants to grow in order to provide sufficient forage and replenish their root reserves. There are various strategies to increase the amount of grazing days, however we have briefly described a couple for you to consider. They are stockpiling and swath grazing.

Stockpiling. Stockpiling is probably the most common method of extending the grazing period. It is based on the previous concepts of planning ahead. One of the first steps in planning is to identify which fields or pastures typically produce sufficient forage and are well suited to late season conditions. If your late season grazing conditions are typically wet, select sites that are well drained and hold up to animal traffic. If the soil remains soft, pugging will occur and cause compaction of the soil and also damage to the roots.

Plant selection also plays an important role in stockpiling. Cattle can graze sufficiently through 8" of soft snow without much hesitation. Therefore selecting grasses and/or clovers that stand more erect have shown greater value to extended grazing systems. Alfalfa has not performed as well due to its high percentage of leaf loss once it hits dormancy. Some species to consider include tall fescue, perennial ryegrass and red or white clover.

Once the fields have been selected and initial grazing begins closely monitor paddocks and stop grazing on the selected paddocks in time to allow sufficient growth for the extended season. This is an important step in extending grazing systems. If you wait too long before halting grazing on the selected paddock there may not be time for sufficient regrowth for the late season. If you halt grazing on your selected paddock too early you risk the forage becoming too mature and less nutritious.

Swath Grazing. Swath Grazing is another management practice that is used to extend the grazing season. It is a practice that has been successfully achieved across the U.S. and Canada. The process involves cutting and windrowing the desired forage for later grazing in the fall or winter. Some of the forages used have been primarily annuals of corn, barley, oats, and millets. However perennial hay fields and pasture have been successfully used as well. Although this practice is better suited for the dry or mature beef cow, it can also be utilized with growing animals. Research has shown variable success in swath grazing for backgrounding calves. The Western Beef Development Center in Canada has reported an average daily gain ADG of .99 lbs with grazing swathed barley and 1.5 lbs ADG with corn. In a Western Beef Development Center trial on swathed Golden German Millet, the 185 backgrounded calves on the trial saw a 2.34 lb ADG. Therefore, selection of appropriate forages and utilizing enhanced management techniques can dictate the performance achieved.

Additional references and information links on swath grazing can be found at the end of this lesson.

Extended Season Considerations

With any of the extended feeding strategies used it is beneficial to closely monitor the feedstuffs whether grass and legume paddocks or small grains as well as the performance of the animals. Strip grazing these systems has been the most efficient method for utilizing extended grazing. This encourages greater feed efficiency with less waste and restricts the animals from walking through the snow and causing it to crust. During the spring season it prevents the animals from trampling the dead material into the soft ground.
Grazing during the dormant season is not harmful to the next summer's growth provided that the stand is not grazed during the critical initial spring's growth. It is also important to ensure the stand has adequate recovery time and that the plants are not susceptible to winter kill because of lost insulation from the snow.

Pasture Renovation

Other areas of consideration in a grazing system include methods to increase forage productivity. Depending on your situation some renovation methods may be more or less acceptable than others, or you may find a combination that works well for you.

Fertilization. Fertilization is often overlooked in any grazing system. As described earlier forage production is a response to nutrients available in the soil. One does not expect our cattle to perform without being fed. Therefore, we should not assume our plants will perform without being fertilized either. Whether your fertilizer is a commercial based or an organic based is not the critical element. However, whether or not to fertilize is. Grass pastures have shown positive response to addition of nitrogen of up to 300 lbs per acre per year. However, several studies suggest that economical balance lies near the application of 150 lbs per acre annually. As mentioned earlier test your soils and determine what is needed. If you don't want to, there are several consultants or businesses that provide such services for a fee.

Sod Seeding. Sod seeding is another alternative method to increase pasture productivity. Sod seeding is generally less expensive than reestablishment and the response is generally quicker. Several studies have shown that adding a legume into the existing grass can increase yield production and increase forage quality. Some species of grass and legumes are more successful than others. Select species that tend to germinate quickly. Northern climates have seen successful legume establishment with red and white clovers. Some of the grasses that have worked well are orchardgrass, perennial ryegrass, and intermediate wheatgrass. There have certainly

been success stories with others as well, but before purchasing find out which are adapted to your soil types.

Frost Seeding. Frost seeding is a practice for northern climates that aid in the thickening of existing pastures. Frost seeding is generally performed in the spring of the year when the soil surface is frozen in the morning and thaws during the day. This action causes the seed that has usually been broadcast to work its way into the soil. Preparations to increase seed germination success lie in the management the previous fall. This is one time where it is recommended to graze or clip close to the sod to provide greater seed to soil contact.

Aeration. Aeration is a way to reduce some of the compaction experienced with heavy soils that are prone to repeated excessive moisture. This could then allow for healthier root growth. This light cultivation has also provided an opportunity to expose some soil which has aided in the establishment of broadcast seeding over existing pasture. Some observations have shown less of a response when performed in sandy soils.

Fencing Systems

Fencing systems is a topic that has had numerous books written about it. There is far too much information to discuss in full in this short lesson. Although this is true, there are certain things that need to be considered as you determine the type of fence to use. These include temperament of livestock, access to electricity, current fence type and condition, whether it is perimeter or cross fencing, will it be permanent or temporary, land terrain, grounding system for electric fence, type of soil and type of posts. Some types of fences include barbed wire, woven wire, and high tensile electric. The high tensile electric has become the type of choice due to the efficiency of retaining the cattle as well as efficiency of construction and maintenance.
For stocker animals it is recommended to use 5 strands electric on perimeter fences at 10, 20, 30, 40, and 50 inches of height. The Perimeter fences are especially critical due to having new animals frequently arriving which are unfamiliar with their new environment. For internal fencing for stockers, it is recommended to use two strands with the heights of 22 and 32 inches off the ground. For a much more extensive discussion on fencing check out Lesson 3 of the Pasture Management Home Study Course

Watering Systems

No matter how efficient your fencing systems or how good of quality your forages, neither will make as much of a difference to animal performance as your water supply or the lack thereof. Water is essential for muscle accretion and activities, so we must supply the animals with unlimited access to a clean high quality source. Significant research demonstrates that water should never be any further than 700-900 ft from where the animals are expected to graze. This is due to the uneven grazing that occurs because the animals don't typically graze beyond that distance from the water source. This is even more critical for stocker cattle due to the volume of water required especially as the ambient temperature increase (see table 4)

Table 4: Sample water requirements for cattle, gallons per head per day.

Temp, F	Gal/lb DM	500-lb calf, 12 lb DMI	750-lb calf, 16.6 lb DMI
40	0.37	4.4	6.1
60	0.46	5.5	7.6
80	0.62	7.4	10.3
90	0.88	10.6	14.6

Source: Winchester and Morris, 1956

There are many different options for providing livestock with water. These include ponds or springs, wells, creeks and streams or public water. Each of these systems has there positive and negative attributes.

Ponds. Ponds can be an inexpensive source of water but water quality and recharge capacity are some of the limitations. It is suggested to restrict animal access to the pond with fencing. Animals will stand in the water and churn up sediment as they fight flies cool themselves, as well as urinate and defecate in the pond.

When designing a pond it is critical to evaluate the soil type that you have in order to determine whether it will sustain a pond. Clay or silt soils seal up and work really well, whereas with sandy or rocky soils it is much more difficult to get the basin to seal.

Creeks and Streams. Creek water can be extremely variable in both quality and quantity. Therefore when evaluating the source of the water i.e. spring, snow thaw, lake, etc. Understanding the source will allow you to understand how variable the supply might be if a drought was to occur. Another consideration in some states is the required limitations to stream access. This will help to maintain water quality. Currently in MN it is not necessary to fence out the stream allowing only limited access to the river.

Wells. This is probably the most common source of water due to the reliability of quality and quantity of water. As time goes on the technologies of piping are also becoming more available to also run the lines above or below ground throughout your pastures. This can be very helpful with improving grazing and manure distribution. With reliability also comes cost. Piping, troughs, wells, pumps, power, etc all have costs associated with them. Therefore, take this into consideration when evaluating your options. There are several good resources like the Missouri Grazing Manual which can help you in determining size and type of pipe that should be used. Remember water flows down hill easier than up hill.

Summary

The Cooperative Extension Service is an excellent choice for resources and services to aid in grazing decisions. There are several providers who offer assistance with grazing plans. Natural Resource and Conservation Service (NRCS) also provides services and currently has money available to assist with establishing grazing practices on your farm.

Grazing is an option for producers who are not only committed to the production of beef but also to the production of grass.

- One has to plan and manage your forage well to successfully reach your beef production goals.
- Plant health is a critical component to any grazing systems.
- Properly designed fencing systems aid in the handling and movement of your cattle.
- Water, as one of the most important nutrients, needs to be easily accessible and of high quality.

Resources and Readings:

Fall Pasture Management Tips
http://www.gov.on.ca/omafra/english/crops/field/news/croptalk/2004/ct_0904a5.htm

Grazing Systems Planning Guide

Missouri Grazing Guide

Ohio Agronomy Guide. "Forage Production" Bulletin 472.
http://ohiooline.osu.edu/b472/forage.html

Pastures for Profit: a guide to rotational grazing

"Rotational Grazing." Henning, Jim., Lacefield, Gary et. al.
http://www.ca.uky.edu/agc/pubs/id/id143.html

Swath Grazing in Western Canada: an Introduction, Agri-Facts, October 2004, Agdex 420/56-2

Stockpiling Forages for Fall Grazing
http://www2.mrs.umn.edu/GrazingWorkshop/documents/astockforwfgc1.html

United States-Canadian Tables of Feed Composition: Nutritional Data for United States and Canadian Feeds, Third Revision (1982)
http://www.nap.edu/books/0309032458/html/

Grazing Management Lesson Quiz
Lesson 4

1. Effective grazing management can reduce feed cost by _____ percent?

2. What are the three critical variables to daily intake?

3. What four factors is stock density based on?

4. How many 500 lb animals should be put in a 15 acre pasture that typically yields 2300 lbs of dry matter during the 170 day grazing period?

5. List 4 factors that should be considered with grazing management.

6. Provide 4 important reasons to assess pastures.

7. What important step is used in stockpiling your forage as a means to extend the grazing season?

8. List 5 factors to consider when selecting an appropriate fence to use.

9. What limitations do ponds have as a water source?

Name_____Phone_____

Address_____

Fax (Optional)_____Email_____