

## **PLANNED GRAZING REQUIRES A PLAN!!!**

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"A goal without a plan is just a wish",  
*Antoine de Saint-Exuperu, Lyons, France*  
Sometimes in life we find ourselves  
barreling forward without much of a plan.  
This often gives us a false sense of making  
progress. In reality, it is very difficult to  
get somewhere if you don't know where  
you are going. Grazing systems are no  
different, without clear objectives, a  
knowledge of your resources, and a plan  
on how to use those resources to achieve  
those objectives, it is very difficult to  
make meaningful progress. The objective  
of this article is to help you start the  
process of planning and implementing  
an improved grazing system.

### **STEP 1: Set a Goal(s)**

It would be ludicrous to get into a car  
and just start driving without any idea  
of where you going. The same holds  
true for grazing systems. You need to  
answer the question "What do I want  
to accomplish?" There are really no  
wrong or right answers. You have to  
decide what you want out of an improved  
grazing system. While we tend to focus  
on production/economic related goals, I  
think it is important to consider lifestyle  
goals also. Here are some examples of  
possible goals:

- Reduce hay feeding days
- Increase stocking rate
- Reduce the cost of producing a calf or  
gaining a pound of weight
- Improve weaning weight
- Reduce the amount of work that you  
need to do
- Improve your herd genetics
- Increase conception rates
- Strengthen your sod
- Spend more time with the grandkids
- Protect your soil and water resources

- And the list goes on ...

Once you decide on the goals that are  
important to you, it is crucial to write  
them down in a carefully crafted goal  
statement that reflects where you want to  
go. This will help you decide how to most  
effectively use the resources that you  
have.

Once you have this statement, DO  
NOT file it away, but rather print it out  
and put it on your refrigerator where it  
can refresh your memory on daily basis.

Example of a goal statement:

"We want to implement a rotational  
stocking system that will allow us to feed  
less hay, maintain good body condition in  
our cattle herd, protect our soil and water  
resources, and allow us time to attend  
our children's extracurricular activities."

### **STEP 2: Inventory Resources**

Once you understand where you want to  
go, you then need to figure out how to get  
there. This process starts by inventorying  
the resources that you have to work with.  
This may include your soils, soil fertility,  
forage base, fencing, water sources  
and locations, cattle genetics, available  
labor, and so on. By inventorying your  
resources, you can begin to understand  
your limitations and what changes would  
have the greatest impact on overall  
productivity. For example, investing  
in improved animal genetics would be  
meaningless if you don't have the forage  
resources that would allow those genetics  
to be expressed. The following list is  
some of the resources that are especially  
important in grazing systems:

1. *Soils and soil fertility.* Not all soils  
are created equal. Deep, well drained,  
fertile soils have a much higher yield  
potential than shallow soils with a high  
percentage of rock fragments. You can  
learn more about the soils on your farm  
using USDA-NRCS Web Soil Surveyor  
by visiting your local extension office or

soil and water conservation district. It is important to remember that forage production even on very good soils can be severely reduced by low soil fertility. The best way to determine soil fertility levels is to get a soil test. In general, we want to maintain soil pH between 6.2 and 6.4 and phosphorus and potassium levels in the medium+ to high range. Your local extension agent can provide you with more information on soil testing and help you to interpret the results.

2. *Forage base.* The type of forage species that you have on your farm can impact both forage productivity and availability during the summer and winter months. For example, a forage system based solely on cool-season grasses and legumes will have great production during the spring and fall, but limited growth during the summer. In this case, adding a warm-season grass could greatly improve summer grazing capacity.

3. *Water resources.* Access to water is often a major factor restricting the use of rotational grazing. Understanding what your existing water resources are and how they can be developed to support improved grazing management is crucial. Your best local resources for designing and installing improved watering systems is your local Natural Resource Conservation Service (NRCS) and Soil and Water Conservation District (SWCD). Even if you do not want to participate in programs that would provide financial assistance to install improved watering systems, the NRCS and SWCD will provide you with technical assistance at no cost.

4. *Fencing resources.* Fence in a rotational grazing system is simply a tool to manage grazing. Most farms will have some type of an established perimeter fence. One of the most cost-effective fencing practices is to install a single electrified wire 30 inches above the ground on the inside of the perimeter fence. What this does

is provides you with the opportunity to subdivide large pastures into smaller ones using temporary fence posts and polywire. Temporary fencing is a powerful tool for improving grazing management.

5. *Forage productivity.* Forage productivity is sum of your soils, soil fertility, forage species, and grazing management plus rainfall. It is important to realize that as management increases in your grazing system, so will productivity. Poorly managed pasture may only yield 1-2 ton DM/ A/year, while those same pastures under improved management could yield 4 or more ton DM/ A/year. So, when you are planning a grazing system, plan for the both the present and the future productivity.

### **STEP 3: Determine Forage Balance**

To determine your forage balance, you will need to know how much forage that you need and how much your pastures are capable of producing. To determine your forage requirements, you will need do a little simple math. For these calculations we need to know the weight and number of animals that we are feeding and their expected dry matter intake as a percent of body weight. For example, you have 100 brood cows that weigh 1200 lb/cow and four bulls that weigh 1500 lb/bull. All are eating on average 2.5% of their body weight each day. So, to determine their annual dry matter requirements you can use the following formula:

DM Required Annually = 100 cows X 1200 lb/cow + 4 bulls x 1500 lb/bull) x

2.5%/100 x 365 days = 1,149,750lb DM

Now we will calculate our forage supply. We will assume our pasture productivity is 3 ton/A or 6,000 lb DM/A. We also need to assume a seasonal utilization rate for the available forage. In most cases seasonal utilization rates range from 40 to 70% and increase as length of the grazing period decreases. In our

example we have 225 acres of pasture and a seasonal utilization rate of 60%.

Using the following formula, we can calculate the amount of forage available to graze.

$$\text{Available Forage} = (6,000 \text{ lb DM/A} \times 60\% \text{ utilization rate/roo}) \times 225 \text{ A} = 810,000 \text{ lb DM}$$

Our forage balance is calculated by subtracting the available DM from the required DM. In this case we have a deficit of 339,750 lb DM. This deficit will need to be made up with hay and supplements. Or we could improve pasture production through better management of our pasture resources. This deficit would translate into around 110 days of hay feeding.

What we have not yet taken into account is the forage distribution. In the case of cool-season pastures, more forage IS produced in the spring when we are unable to utilize it and less in the summer when we really need it. Therefore, our forage deficit may be even larger, if we do not have warm-season grasses in our system.

#### **Step 4: Setting a Stocking Rate for Your Farm**

Stocking rates that are set too low tend to have the highest production per animal, but lowest production per acre. These stocking rates tend to waste pasture resources due to lower utilization rates and decrease overall profitability.

Stocking rates that are set too high tend to have low individual animal performance and low output per acre. These stocking rates tend to be unprofitable because neither the pasture nor the animals are productive.

The goal in setting sustainable stocking

rates is to find the "sweet spot" where animal performance is good and output per acre is optimized. In Kentucky and other transition zone states, feeding no hay is not normally the most profitable model. Our economists have found that around 60 days of hay feeding usually results in the greatest net return. However, it is important to note that the economics of hay feeding and grazing are NOT static, but rather change as the price of hay and grazing change.

#### *Stocking Rate Example:*

100-1200 lb cows and 4-1500 lb bulls  
Pastures yield 6000 lb DM/ A/year  
Seasonal utilization rate is 60%  
Hay Feeding period is 60 days  
Grazing period is 305 days

Forage Requirements from Pasture =  
 $((100 \text{ cows} \times 1200 \text{ lb/cow} + 4 \text{ bulls} \times 1500 \text{ lb/bull}) \times 2.5\%/100) \times 305 \text{ days of grazing} = 960,750 \text{ lb}$

Pasture Required in acres =  $960,750 \text{ lb} / (6,000 \text{ lb DM/A} \times 60\% \text{ utilization rate}/100) = 267 \text{ A of pasture or } 2.67 \text{ acres/cow}$

In my experience, a stocking rate of 2.67 acres/ cow-calf is about right if you want to have an extended grazing season. If you are on good soils with good fertility and high level of grazing management, then 2 acres/ cow-calf may be sustainable.

If your soils are not great but have ok fertility, and your managing grazing but not intensively, then 3 acres/cow is about right. As you creep below 2 acres/ cow-calf, your hay feeding period will tend to increase and in most cost cases longer hay feeding periods are negatively related to profitability.

We plan for "average" years and we don't often have an average year. One of the most important things to build into a grazing system is flexibility to respond to changes. It could be a drought or a flood or changes in the market. The point is that having

the ability to respond to those changes  
in a timely fashion can often be the

difference between making a profit or not.