

Goat Producer's Newsletter

Terry Hutchens, MS, Animal and Food Sciences, UK
Robert Harmon, PhD, Animal and Food Sciences, UK

Potential for Using Goats as a Vegetation Management Tool for Enhancing Landfill Cap Stability and Reducing Maintenance Costs

William Ison UK, Animal Science Student

William Ison is a University of Kentucky senior majoring in Animal Sciences. William conducted the research designed the grazing scheme and constructed the business plan for the Bluegrass Depot. The Depot is located in eastern Fayette County. William Ison worked with direction from Terry Hutchens, Extension Specialist, University of Kentucky Animal & Food Sciences Dept

Goats are beneficial to the environment and can be used as reliable vegetation managers and nutrient recyclers on environmentally sensitive areas such as clay-caped landfill sites. Goats accentuates soil-plant nutrient flow and will impede the natural succession of grass land to brush, tall shrubs, trees, and other plants that have deep penetrating roots. Therefore, goats are exceptional effective with vegetation management and are particularly beneficial under more fragile grazing conditions.

The use of goats in vegetation management is new to the eastern sector of the country. However, the interest is growing rapidly, particularly the employment of goats in municipal settings with pesticides as well as

labor cost for hand removal. The employment of goats in municipal areas reduces human contact with pesticides as well as labor cost for hand removal.

The Lexington Bluegrass Station, located near Lexington Kentucky ask for assistance from us, UK, Cooperative Extension Service, to assess the potential for using goats to control grass and vegetation on 51 acres of landfill. Fifty one acres of landfill is divided into three landfill sections and are comprised of segments measuring 30, 14 and 7 acres of landfill.

Requirements for Introduction of Goats to Landfill Sites

Assessing Animal Needs

Water tanks and water will be supplied to each site by the Depot while the producer will supply the goats, temporary electrical fencing for subdividing the landfills and free choice mineral and feeders. The perimeter fence is 8 ft chain link fencing and the integrity of the fence will be maintained by the Depot.

The classes of goats to consider in vegetation management are as follows: first, a commercial doe herd. The landfill grazing site will provide an opportunity for removing the herd from the farm of residence, thus allowing resident pasture rest and regrowth as well as an opportunity to reduce parasite loads residing on resident pastures.

However, in this case and in the case of most municipal situation, the grazing herd must be removed from the site at the end of the grazing season. Over-wintering of the herd on site is generally not an option.

Second, feeder kids may be purchased off farms or stockyards (weights 35-40 lbs) in the spring and goats are then sold for slaughter in the fall (weights 65-80 lbs). The inherent problem with this type of enterprise is the high risk associated with the high death loss potential of purchased weanling goats and the intense labor requirement than is initially need in order to sustain acceptable survival rates. The D-factor often comes into play. That is, the greater the D-factor or the greater the distance from home, the lower the survival rate. Third, feeder kids require more facilities for working and treatment than do adult goats and therefore the producers would need to move working facilities, shade and shelter facilities to the grazing site. Finally, feeder kids would be purchased on the highest market of the year, the spring market. They are then sold on a lower priced market which generally is the case in late fall. The downward push of the price curve makes profit margins narrow. Higher death losses and greater input costs can negatively affect profitability of this type of enterprise.

The third and perhaps most practical choice is to purchase cull animals, both bucks and does in the spring, grazing them through the summer and sell in the fall. The price per pound of animal bought or sold varies only slightly during the year. Next, death losses are lower in older animals, labor and facility needs are small when compared to feeder kids. Therefore, in this case we are selecting the last option, the purchased cull animal option.

Grazing Strategy

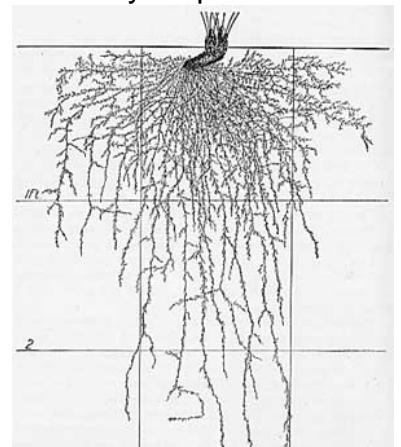
The format for the grazing strategy was taken from a University of Kentucky, Extension publication, **ID 143- Rotational Grazing**. This publication will walk producers' through the steps needed for proper pasture setup of

a rotational grazing system, whether the grazing species is cattle or goats.

How many pasture subdivisions do you need? This number can be determined by dividing the number of days of pasture rest (period of not grazing and allowing regrowth) by the number of days of grazing (time spent on a location actually grazing) and an additional paddock is added to the final number of paddocks (Table 1 and 2).

Tall Fescue needs 30 days of rest between grazing periods. Paddocks should be grazed intensively for a short period of time. This type of management system promotes new vegetative growth by reducing incidence of over maturation, reduces overgrazing which assures rapid regrowth, promotes deeper root systems and therefore, reduce dry weather effects and promotes an increase in overall pasture density. Improve density increases yearly utilization and improves overall carrying capacity. Increased carrying capacity increase the number of animals that can be sustained on 1 acre of pasture.

The two larger landfill sites, 30 and 14 acre sites are calculated as described below. The number of head will be changed for the smaller of the two landfill sites. The projected stocking rate will be 5 goats / acres or approximately 500 lbs of livestock per acre. This is equivalent to ½ an animal unit per acre.



Deeper root penetration as a result of rotational grazing

Table 1

Number of Paddocks

(30 Days Rest / 7 Days Grazing) = 4.2 Paddocks
+ 1 Paddock =

5 Paddocks (for each of the two larger lots).

Table 2

Acres required per paddock

$$\frac{(\text{Average Weight Animal}) \times (\text{Percent Dry Matter Intake}) \times (\text{Number Head}) \times (\text{Days / Paddock})}{(\text{DM per acre} \times \text{Percent Utilization})}$$

Example 1

$$\frac{(100 \cdot .05 \cdot 150 \cdot 7)}{(2000 \cdot .60)} = 4.3 \text{ acres per paddock}$$

For the 30 acre tract, approximately, 22 acres of grazing area will be broken into 5 grazing paddocks and each paddock will be approximately 4.33 acres in area. Goats will be rotated each 7 days. A single 7 acre area will remain as *unplanned grazing* in order to provide a sacrifice paddock to be used during dry weather condition. During weather extremes, rotation onto grazing paddocks can be slowed by 7 days by adding a 6th paddock. Thus give more recovery time for each paddock between grazing periods.

The fourteen acre landfill site will support 70 head of goats. Using the formulas in Tables 1 and 2, we need five, 2 acre paddocks. Each paddock shall be grazed for 7 days and rested for 30 days. Likewise, an additional unplanned paddock measuring 4 acres will be used as the sacrifice paddock.

Landfill three, 7 acres in area, is smaller than the others two landfill areas and will be grazed as a single paddock. Landfill three, can be watched closely to prevent overgrazing. The stocking rate will be 35 goats /

acre. In case of extreme dry periods, these goats can be move to the larger landfill sites and grazed together with the other animals.

Environmental Impact Assessment

Appropriate Nutrient Management

Manure and nutrient management is an important component of any livestock related endeavor. Nutrients deposited by goats are nitrogen (N), phosphorus (P), and potassium (K). The nutrient outputs of goats are based on animal units or 1000 kilogram (kg) of animal output of waste on a per day basis.

The nutrient out-put per 1000 Kg of goats is estimated to be (0.45 Kg of N), (0.11 Kg of P) and (0.31 Kg of K) all release daily.

This project has 255 goats weighting approximately 100 lbs each. Therefore 25,500 lbs of live weight is 11,590 kg. Therefore, on a 1000 kg bases there are 11.59 animal units on the 3 land fill sites. Furthermore, there are (2.2 lbs N), (0.054 lbs P), and (0.15 lbs of K) being applied per acre per day and, the nutritional needs for tall fescue are estimated to be (39.2 lbs of N), (4.2 lbs P) and (42 lbs of K) per acre per day there is little need for concern for nutrient runoff.

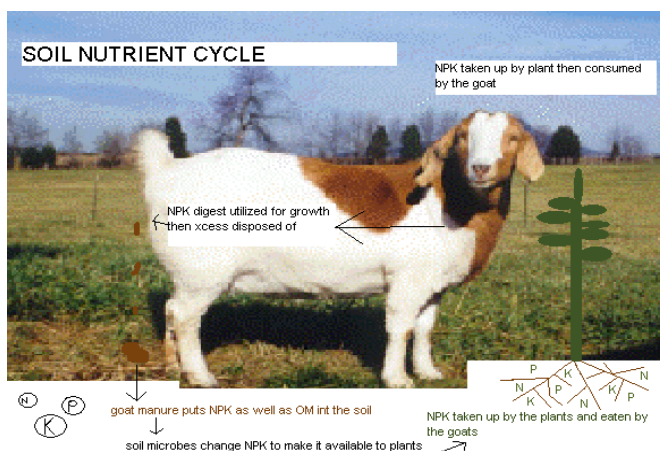


Table 3

| | <u>Goat Production</u> | <u>Tall Fescue Uptake</u> |
|----|------------------------|---------------------------|
| N= | 0.2249 lbs | 39.2 lbs |
| P= | 0.054 lbs | 4.2 lbs |
| K= | 0.15 lbs | 42.0 lbs |

All on a dry matter (DM) basis.

Economic Considerations

Cost and Returns

We have designed a workable grazing system. And we have a high degree of assurance of not creating an environmental hazard through nutrient runoff. However, is there a profit insensitive for a potential producer who may wish to participate in vegetative management of landfills and similar municipal sites such as this?

The most significant cost for this program is livestock cost. The values seen in the yearly costs column, shown in Table 4, are based on the average cull goat cost of \$65/cwt for an average live body weight of 80 lbs. This results in a cash outlay of \$13,260/year.

Second, the goats will be grazing for 240 days with an estimated average daily gain of 0.20 lbs per day resulting in 48 lbs of gain per head. The average weight of the goats at market time in October is projected to be 128 lbs, all of which result in an estimated total gain of 32,640 lbs. The total weight is discounted by subtracting an assumed death loss of 3% or 980 lbs of live weight. Sale price estimates for slaughter cull goats in October is \$53 cwt resulting in gross returns of \$16,621 (Table 4). Net return is shown in Table 4, column 3, \$2574 after subtracting cash cost. Therefore, the projected return per acre of landfill grazed is \$50.47/acre.

Conclusion

The benefit to the landfill manager is significant. The average cost of mowing municipal sites in central Kentucky is thirty dollars / acre / mowing. The landfills are generally mowed 3

times / year. Table 5 indicates an annual savings to the Bluegrass Depot of \$4590 annually. As a result of proper grazing management, forage quality, density as well as root system will improve with time leaving the landfill less subject to sheet erosion and therefore more resistant to woody plant and invasive species invasion of the landfill cap. Rotational grazing systems have been shown to improve nutrient distribution and simultaneously improve nutrient cycling within the soil-forage environment. All plant nutrients applied by manure dropping will be distributed through plant-soil uptake are not subject to runoff and will not serve as a source of pollution. Finally, there is an economic advantage for the goat producer and the Bluegrass Depot for forming a partnership such as the one described above.

| Table 4 | Cost / Year | Returns/ Year |
|-----------------------|--------------------|----------------------|
| Cost Items | \$ | \$ |
| Goat Sold Net Returns | | \$16,621 |
| Goats | 13,260 | |
| Mineral | 128 | |
| Fencing | 215 | |
| Medication | 383 | |
| Transportation | 255 | |
| Total Costs | \$14,047 | |
| Gross Returns | | \$2574 |

| Table 5. | Cost/Acre | Landfill Acres 51 Cost / Mowing | Landfill Acres 51 (3 mowing / year) Cost / Mowing / Year |
|--|------------------|--|---|
| Savings to the Municipality Bluegrass Depot | \$ | \$ | \$ |
| Mowing Cost | \$30 | \$1530 | \$4590 |
| * Mowing cost is based on local cost of mowing in Fayette Co. Kentucky | | | 4 |

**Goat Herd Improvement Program
Ken Andries
Kentucky State University**

Records are important to the growth and success of any business, including live-stock production. Production-based records allow producers to do a better job selecting animals that are more productive, have fewer problems, and ultimately are more profitable. Performance records have been used by other livestock industries for years to improve traits of economical importance such as weaning weights, rate of gain, twinning rates, and parasite resistance. The goat industry has been slower to utilize records, but they will become more important as the industry matures over the next few years. Producers who start collecting and utilizing records now will have an advantage in markets for breeding stock as well as increase profitability of commercial herds.

Basic performance records need to be collected at least two times a year: at birth and at weaning. Birth records need to include identification of the kid, dam, and sire; birth date; birth weight; sex of the kid; type of birth; and a note of any difficulty related to the birth. Weaning records need to include the date of weaning and the weaning weight. Weaning needs to be done as close to a standardized date as possible. Many Kentucky goat producers use 90 days as a standard weaning date. Weights are adjusted to 60 or 90 days, using daily gain to get the standardized age.

Last year, I started a program to help producers obtain and utilize performance records. I'm still offering the service, free of charge, to any producer. Producers need to collect birth data on their animals, and I'm willing to come to your farm and help collect weaning weights and will bring a scale if necessary to help you collect this information. Once the data is collected, I will put the information into a spread sheet and calculate adjusted weights for your animals. I also summarize doe and buck performance for the

kidding season so you can better identify the poor-doing does and best bucks in your herd. I will send you a report for your herd after I get the information finished.

If you already collect this data, I'm willing to come out and help you work your animals to get the weaning data as long as I can get a copy of the information. I am willing to do the analysis on your data and provide you the reports if you wish. You can also send me the data if you have it and I will do the reports.

To collect birth weights, you can use any type of scale, simply utilize a bucket or basket that will hold the kids still. Most electronic scales will allow you to "zero" the scale while weighting an empty bucket, if your scale will not allow you to zero the bucket weight out, simply weigh the empty bucket and subtract the weight from the total with the kid to get the actual kid weight. I do ask when possible to get birth weights on all kids born, including those born dead.

If you are interested in this program, please contact me at 502-597-5094 or by e-mail at ken-neth.andries@kysu.edu. I may need a few days to plan a trip to your farm, so please contact me early if possible.

Farmers Must Make Assumptions in Predicting Feed Prices

Taken from:

**West Kentucky Grain Market Project
Monthly Market Update
March 21, 2007**

Steven K. Riggins, UK Grain Marketing Specialist
sriggins@uky.edu

The market situation in corn, soybeans and wheat is fairly well defined and has been discussed in the agricultural and even main press, for several months. It is argued that current very high corn and wheat prices started in the wheat sector due to two consecutive small global wheat harvests. Increasing demand by China and India due to several years of expanding economies and therefore improving diets served to heighten the impact of the two small wheat harvests on prices. Currently, it appears that high wheat prices have resulted in a substantial increase in global wheat acres seeded.

However, given the very small projected wheat supplies for the end of the 2006-07 marketing year (May 31, 2007) – the smallest relative to use on record at the global level – the market remains well supported. It will probably take several months of harvest data in the northern hemisphere confirming a very large 2007 crop before wheat prices soften from their current lofty levels.

Another issue supporting wheat (and soybean prices) has to do with the perhaps over-publicized issue of corn ethanol production in the U.S. The dramatic increase in the use of corn for ethanol combined with a very robust domestic livestock feed demand and a very strong export demand for U.S. corn has resulted in projections by USDA of the second smallest corn carryover, relative to use, at the end of the marketing year (August 31, 2007) on record. Unlike the wheat situation described above, current very high corn prices are the result of rapidly increasing demand not a production problem due to weather or disease.

The question the market is trying to answer now is what set of price relationships is needed to allocate crop acres on a global scale to supply next year's likely uses. If corn prices are "too" high relative to soybeans or wheat, prices for these commodities could be even higher 6-12 months from now. As an example, if the U.S. is going to switch a huge amount of land from soybeans to corn this spring the market may need to provide a very strong soybean price for the May 2008 and later futures contracts to induce South American farmers to increase acres devoted to soybeans this coming fall rather than corn.

Even though corn and wheat prices are at very strong levels and soybeans prices are in the upper part of their 35 year price range, farmers should not forget that the strength of a market driven economic system is the ability to rapidly shift resource allocations as market signals dictate. Yes, with such a small projected corn carryover and such record setting use forecast for the next few years an inadequate number of corn acres planted or a serious weather/disease problem would take corn prices to new record high levels (old record summer of 1996 about \$5.50). However, the December futures contract had never traded above \$4.00 until January 16, 2007 and it is possible the \$4.295 high set on February 22, 2007 will be the highest for the December 2007 corn futures contract when it finally expires in December.

In order to make the case of extended very strong corn prices it is necessary to assume that oil prices will stay high enough to keep corn ethanol production sufficiently profitable that rapid expansion in ethanol production capacity continues for at least 18-24 months or more. It is also necessary to assume that tariff protection and tax credits are maintained

and that a higher mandate than the current 7.5 billion gallons of renewable fuel will be enacted by Congress – this will provide the base to continue to price ethanol as an additive not a fuel. And as pointed out above it is necessary to assume that wheat and soybean acres at the global level don't give up "too" many acres to corn.

Therefore, farmers might want to consider that prices may not keep going up, corn and wheat prices are at extremely high levels, soybean prices are very strong and things could look quite different by fall harvest time.



Photo 1



Photo 2

Economical Goat Production Keenan Turner UK, Terry Hutchens UK

Grazing expert and retired Pulaski County Extension Agent, reports on a goat operation that gives us pause for re-consideration on how best to produce these animals, meat goats and how to have a return on investment at the end of the year. David Burton and family, operate a cattle and goat farm in Pulaski County, Kentucky. The original purpose of the goats was brush clearing and establishment of cattle pasture. However, the Burtons' have found the goats to be a profitable enterprise that integrates well with the cattle operation.

Photo 1 is a snapshot of a group of 24 does presently averaging 2 kids/doe. These does have never been fed hay, however they do have free access to a high quality mineral. Secondly, they are fed just enough feed, 1/3 lb/head/day of concentrate, so that they will come to the barn each night. The feed cost per head/day is 2.5 cents. The primary feed source for the goats is brush, and low hanging tree branches made up of cedar brushes, honeysuckle, tree bark, blackberry briars and orchardgrass pasture (Photo 2).

The stocking rate is approximately, 1/2 doe per acre. There have been little to no health issues for the herd. The Burtons' report that they have not dewormed the goats since July 2006. Rock outcrops appear to solve the foot trimming and foot disease problem.

Perhaps many producers do not have the land resources described here, but efforts must be made to duplicate a similar environment by reducing stocking rates to a reasonable number, plan forage systems that will drastically reduce dependency on purchased feeds, and provide goats foot trimming objects that can be located in pasture fields and loafing areas.

Organic Internal Parasite Management

Terry Hutchens, UK,
Extension Goat Specialist

Many goat producers are now gazing into the crystal ball, trying to find a better way to control gastrointestinal parasites this grazing season. Some Kentucky goat farmers have tried conventional dewormer drugs, with limited success, and now perhaps many of you are ready to cross over to the world of the mystical, half and unproven truth of ORGANIC dewormers.

Before cramming something down your best doe's mouth: STOP and consider the facts. In short, for the most part, there are no facts related to most organic deworming products. Claims that support many of these organic products are nothing more than invalidated observations of parasite control. Furthermore, the only organic product that has been re-researched to any extent is diatomaceous earth (DE). DE has been used in toothpaste, insecticides, cat litter, goat dewormer, and many other products. However, at least seven studies have shown that DE is not an effective dewormer for goats. Garlic and pokeweed extract are popular and are being used on some Kentucky farms. Yet, the degree of effectiveness of these products is not known. Antidotal observations are not acceptable forms of proof that can be used as a general recommendation. The use of antidotal observations can lead to disastrous outcomes when unproven products are depended upon as the primary form of worm control.

The Meaning of Organic

For future reference, in this article, we must now define organic. The definition of organic is simply, the production of food or fiber in a manner that does not use conventional production methods. There is no reference to drugs or chemicals in this definition, only to methods. Therefore, there are many organic choices that can be made on Kentucky goat farms that do not require drenching or injecting of drugs or remedies.

Primary Cause of Parasite Infections in Kentucky

The major problem with parasite control in Kentucky is not directly related to drug effectiveness but to continuous re-infection occurring at the pasture interface. This problem is intensified by common saturations such as overstocked pastures, poor grazing practices, and no pasture improvement program. Because 90 percent of the parasites on the farm reside on pastures; this should be the primary focus of management. In general, grazing height management can have a major impact on reducing gastrointestinal parasite infections in goats. It is imperative that farmers become familiar with pasture density and height assessment procedures.

APPLICATION OF FARM GASTROINTESTINAL PARASITE ASSESSMENT (FARM-GPA)

Before beginning the grazing season conduct an on-farm evaluation of pasture resources. The Farm Gastrointestinal Parasite Assessment (FARM-GPA) is a tool to assist farmers in making an estimate of the degree of parasitic infections that can be expected in the commencing grazing season. It is not too late to make productive changes this year and even greater changes in future years. Begin the farm assessment by answering the following questions.

APPLICATION OF FARM GASTROINTESTINAL PARASITE ASSESSMENT (FARM-GPA)

Before beginning the grazing season conduct an on-farm evaluation of pasture resources. The Farm Gastrointestinal Parasite Assessment (FARM-GPA) is a tool to assist farmers in making an estimate of the degree of parasitic infections that can be expected in the commencing grazing season. It is not too late to make productive changes this year and even greater changes in future years. Begin the farm assessment by answering the following questions.

FARM-GPA

1. Where are the worms, the gastrointestinal nematodes, residing on your farm?
 - a. Worms reside in a dormant state within the small intestine of the goats
 - i. Were goats dewormed at kidding and prior to grazing?

 - b. Greater than 90 percent of the parasites reside in manure pellets on the farm and slowly move from manure to green grass foliage as the weather warms.
 - i. Were goats given access to all the pasture areas during the winter?

 - c. Intestinal parasites, nematodes, must remain out of sunlight and within a film of moisture and generally reside in an area from the soil line upward to within 4 to 6 inches of pasture height.
 - i. Do your goats often graze below the 4- to 6-inch "*infection zone*" during the grazing season?

2. If you answered yes to any of the previous question, conduct a *Seasonal Carrying Capacity* analysis of your farm.
3. What is the *Seasonal Carrying Capacity* of your farm or how many pounds of livestock should be grazing your farm?
4. The *Seasonal Carrying Capacity* is the point in which the economical and environmental sustainable stocking rate is reached.
 - a. Begin your farm evaluation by considering the following statements dealing with economic and environmental factors:
 - i. We are feeding concentrates all year long to maintain expectable body condition

 - ii. We are feeding hay in late summer or early winter three out of five years

 - iii. We have greater than 3 percent death loss due to parasites infection

 - iv. We must dewormer three or more times during the grazing season

 - v. We have poor pasture cover soil exposure due to low forage density

 - vi. We are experiencing soil erosion in one or more locations on the farm as a result of overgrazing _____
5. If you agree with any of the previous statements, continue the **FARM-GPA** evaluation procedure.
6. Determine the the *Seasonal Carrying Capacity* for your farm.
 - a. Use the *Seasonal Carrying Capacity* formula (Formula 1.) below to determine the estimated number of animals that can be sustained on your farm while maintaining economic and environmental integrity.
 - b. Use Tables 1, 2, 3, and 4 to fill in each variable of the *Seasonal Carrying Capacity* formula.

Formula 1.

$$\text{Season Carrying Capacity Formula} = \frac{\text{Annual Forage Production} \times \text{Seasonal Utilization Rate}}{\text{Average Daily Intake} \times \text{Length of Grazing Season}}$$

Table 1.

Annual Forage Production: is your best estimate of the total amount of forage dry matter (DM) produced per acre annually.

Sample Method: Walk across each pasture field and look at your feet in three locations/pasture, look down at your feet and estimate a 12-inch by 12-inch area and determine the percent of soil cover within the area estimate

| | | |
|------------------|--|---------------------|
| Excellent | At least 90% of the soil is covered | 7500 lb DM/a |
| Good | 75% - 90% covered | 5500 lb DM/a |
| Fair | Less than 75% covered | 3500 lb DM/a |

Table 2.

Seasonal Utilization Rate: is an estimate of the percentage of the annual forage production that will actually be harvested by the grazing livestock.

| Extent of Rotational Grazing* | | | |
|--------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 3-5 Day Rotation | 7-10 Day Rotation | 15-20 Day Rotation | 25-30 Day Rotation |
| 70% utilization (0.70) | 65% utilization (0.65) | 55% utilization (0.55) | 45% utilization (0.45) |

* Frequent rotations utilized forage more efficiently.

Table 3.

Average Daily Intake: is the amount in lb dry matter consumed by a given class of livestock daily. High intake (greater than 3.5% of live body weight) requires high quality forage.

| | |
|---|------------------------------------|
| Gaining kids, yearlings, and lactation = | (0.05) X (live body weight) |
| Breeding buck/doe, late pregnancy = | (0.035) X live body weight |
| Dry and nonpregnant does | (0.025) X live body weight |

Table 4.

Length of Grazing Season: is the number of days the animals will be actively grazing on the pasture. Grazing length is highly dependent on weather conditions of temperature and rainfall. In addition, grazing method can either increase or reduce the length of grazing time. In general, grazing time increases, when rotational grazing is implemented. Rotational grazing reduces drought stress, and improves stand density and root volume. Length of grazing season in Kentucky is generally between 150 and 180 days. However, it is possible to increase grazing time through improved management systems (section 9).

| | | | |
|-----------------|-----------------|-----------------|----------------------|
| 120 Days | 150 Days | 180 Days | > 180 Days |
|-----------------|-----------------|-----------------|----------------------|

7. An example of the correct procedure to make an informed estimate of the *Seasonal Carrying Capacity* for your farm begins with a pasture inspection and by selecting formula variables from Tables 1 to 4.
 - a. Annual Forage Production is determined to be Good = 5500 lbs DM
 - b. A 25-30 day rotation is used = 0.45 utilization rate
 - c. Average daily Intake for late pregnancy does = 0.035
 - d. Length of the grazing season is estimated to be = 150 days

Example 1.

| | | | |
|---------------------------|--|----------|----------------------------------|
| | Annual Forage Production | X | Seasonal Utilization Rate |
| Season Carrying | 5500 lb DM | | 0.45 |
| | <hr style="border: 1px solid black;"/> | | |
| Capacity Formula = | Average Daily Intake | X | Length of Grazing Season |
| | 0.035 lb DM | | 150 Day |

8. The primary step in determining the estimated *annual carrying capacity* of your farm is to use the **FARM-GPA** format. If stocking rates are reasonably close to the estimate, overgrazing is reduced, pasture height can be managed well enough to avoid grazing below the 4-inch "infection zone" (section 1c). However, younger animals should not be grazed below 6 inches of pasture height. When a very limited degree of rotation is interjected into the grazing program, pasture regrowth and recovery will improve pasture density, which increases pasture carrying capacity.

Answer:

(5500 X .45 = 2475)

(0.035 X 150 = 5.25)

2475/5.25 = 471 lb goat/acre

471 lb goat/100 lb doe = 4.7 does/acre

471 lb goat/150 lb doe = 3.14 does/acre

8. The primary step in determining the estimated *annual carrying capacity* of your farm is to use the **FARM-GPA** format. If stocking rates are reasonably close to the estimate, overgrazing is reduced, pasture height can be managed well enough to avoid grazing below the 4-inch “infection zone” (section 1c). However, younger animals should not be grazed below 6 inches of pasture height. When a very limited degree of rotation is interjected into the grazing program, pasture regrowth and recovery will improve pasture density, which increases pasture carrying capacity.
9. Below are other sources of pasture management information.

| | |
|------------|---|
| AGR-59 | Tall Fescue |
| AGR-85 | Efficient Pasture Systems |
| AGR-108 | Tall Fescue in Kentucky |
| AGR-119 | Alternatives for Fungus Infected Tall Fescue |
| AGR-162 | Stockpiling for Fall & Winter Pasture |
| AGR-175 | Forage Identification and Use Guide |
| ID-74 | Planning Fencing Systems for Intensive Grazing Management |
| ID-97 | Grazing Alfalfa |
| ID-143 | Rotational Grazing |
| AE 2005-04 | The Economics of Renovating Pastures with Clover |
| AE 2005-05 | The Economics of Using Improved Red Clover Varieties |
| AE 2005-06 | The Economics of Pasture Fertilization |

<http://www.uky.edu/Ag/Forage/ForagePublications.htm>

For additional information contact:

**Terry K. Hutchens
Extension Associate Specialist,
Animal and Food Sciences,
University of Kentucky.**

859-257-2465

859-323-1027

thutchen@uky.edu