The Acre

In all the English-speaking countries, land is traditionally measured by the “acre” a very old Saxon unit that is either historic or archaic, depending on your point of view. This Old English word meaning a field is derived from the Latin ager and Greek agros, also meaning a field. There are references to the acre as early as the year 732. As a unit an acre was originally a field of a size that a farmer could plow in a single day. In practice, this meant a field that could be plowed in a morning, since the oxen had to be rested in the afternoon. The French word for the unit is journal, which is derived from jour, meaning “day”; the corresponding unit in German is called the morgen ("morning") or tagwerk ("day's work").

Most area units were eventually defined to be the area of a square having sides equal to some simple multiple of a distance unit, like the square yard. But the acre was never visualized as a square. An acre is the area of a long and narrow Anglo-Saxon farm field, one furlong (40 rods) in length but only 4 rods (1 chain) wide. This works out, very awkwardly indeed, to be exactly 43,560 square feet. If we line up 10 of these 4 X 40 standard acres side by side, we get 10 acres in a square furlong, and since the mile is 8 furlongs there are exactly 10 X 8 X 8 = 640 acres in a square mile referred to as a section.

One inch of rain over an acre totals 27,154 gallons and weighs 226,610 pounds.
Grazing Capacity

A pasture must be stocked appropriately to maintain its health and productivity. The amount of forage removed by horses during grazing must be balanced with the amount of forage available in the pasture.

The average amount of forage produced on different types of pasture is shown in Table 1. While table values can be used to estimate the amount of forage growing in your pastures, a more accurate technique for determining the amount of forage available for grazing involves taking a representative sample from your pasture.

Equipment needed
- Hoop, grass clippers or scissors, hand-held spring scale that weighs in grams (a 300-500 gm scale works best), small to medium-sized paper bags

A hoop can be constructed by bolting the ends of an 8-ft long, ¼” cable. This will produce a hoop with a 30- inch diameter. Hardware and home improvement stores sell cable and bolt attachments for about $5. A 500-gram scale can be purchased from forestry, animal health or surveying companies for about $40.

Procedure:
Step 1: Pre-weigh empty bags and record the weight.
Step 2: Select a sight to clip. Select a site where the soil, slope and grasses are representative of the pasture as a whole.
Step 3: Toss hoop and clip forage. Randomly toss the hoop and let it land flat on the ground. Clip the plants lying within the hoop down to ground level. Discard all litter, roots, weeds and soil (everything but actual pasture grasses).
Step 4: Put clippings into a pre-weighed paper bag.
Step 5: Let clippings air dry in the bag. Drying may take 2 to 4 days. The clippings should look and feel like hay when they are dry.
Step 6: Weigh the bag using the gram scale. Subtract the weight of the bag from the weight of the clippings + bag.
Step 7: Average weights obtained from each hoop. To obtain a representative sample, plants should be clipped, dried and weighed from several different locations within your pasture. Average the weights (in grams) obtained from each hoop.
Step 8: Calculate the total amount of forage growing per acre. Multiply the average hoop weight by 20 to convert the grams of forage in an 8-ft circumference circle to pounds per acre. This measurement is the total pounds of forage per one acre of pasture.
Step 9: Multiply total pounds of forage per acre times the number of acres in your pasture.
Step 10: Calculate the forage available for grazing. Some of the forage in a pasture will be lost to trampling. And some of the forage needs to be left behind to sustain the plant. So the total amount of forage growing in your pasture will have to be adjusted to account for these losses. To determine the amount of forage available for grazing, multiply the total amount of forage by 0.35.

Determining how much forage is grazed by horses
As a rule of thumb, a horse will eat, trample or damage approximately 3% of its body weight per day in pasture forage. Thus, the average 1000-lb horse would use 30 lbs of forage per day (1000 x 0.03= 30).

The amount of forage consumed per hour can also be estimated. Horses turned out to pasture fulltime do not graze the entire 24-hr period. Instead, horses will only spend 9 to 14 hours a day grazing. Therefore, an average 1000-lb horse will likely consume 2.5 to 3.5 lbs forage (air-dry weight) per hour (30 lbs ÷ 9 hrs = 3.5 lbs/hr and 30 ÷ 14 hrs = 2.5 lbs/hr).

Determining your pasture’s grazing capacity or length of grazing time
Once you know how much forage is available for grazing, you can calculate how many horses your pasture can support (grazing capacity) or how long your horses may be able to stay on the pasture for grazing.

Number of horses the pasture can support =

\[
\text{Amount (lbs) of forage available for grazing} + \frac{\text{Length of time (days) \times 30 \text{ lbs forage per horse}}}{\text{horses will graze}}
\]

OR

Length of time horses can graze (days) =

\[
\frac{\text{Amount (lbs) of forage available for grazing}}{\text{30 lbs forage per horse} \times \text{Number of horses}}
\]

To extend your grazing season (ie, add more days), you may choose to graze for a limited number of hours per day. To calculate grazing on an hourly basis, simply convert days to hours and use the estimated forage consumption per hour (i.e., 2.5 to 3.5 lbs forage/hour/horse) in place of forage per day.

Table 1: Estimated forage available (tons/acre) for grazing during spring, summer and fall

<table>
<thead>
<tr>
<th>Season</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring &amp; early Summer</td>
<td>&lt; 2.0</td>
<td>2.0 – 4.0</td>
<td>4.0 – 6.0</td>
</tr>
<tr>
<td>Late Summer &amp; Fall</td>
<td>&lt;0.5</td>
<td>0.5 – 1.0</td>
<td>1.0 – 2.0</td>
</tr>
</tbody>
</table>

Source:
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Department of Animal Sciences

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John Mark Shuffitt
Livestock Agent III
Marion County Extension Service
Celebrating the Fifty-seventh Annual
Beef Cattle Short Course
Hilton University of Florida Conference Center
April 30 – May 2-4, 2008; Gainesville, FL

Beef cattle producers continue to face challenges that affect the potential for profitability of their beef cattle enterprise. Increasing production costs coupled with unfavorable weather patterns continue to drive cattlemen to examine their bottom line. To that end, today’s cattlemen continue to explore potential marketing options, means to improve the quality of the calves they market, and improved production practices as well. The 57th Annual Florida Beef Cattle Short Course begins Wednesday afternoon with the annual market outlook. Looking at current market trends is important as the beef industry faces increasing production costs and expansion of the ethanol industry and the associated implications. The afternoon program continues with a pair of current topics that outline the implementation of instrument grading for beef carcasses and marketing and alternative production systems. The final installment of the program that afternoon is an economic comparison of alternative production systems for beef cattle producers. The afternoon program concludes with an opportunity for the participants to interact and exchange information during the evening reception and Allied Trade Show. Thursday’s program is entirely dedicated to bulls. A wide spectrum of important topics related to bulls will be addressed throughout the day. Thursday starts with a discussion that addresses EPDs to select and evaluate bulls. The theme continues with a discussion of genetic markers that should help clarify fact from fiction in this emerging genetic selection tool. The program shifts from selection to production as we look at how to adapt bulls to the Gulf Coast region and bull management considerations for commercial producers. Finally, because buying a bull is a financial investment, it is important to address how much a producer can pay for a purchased bull. The afternoon program continues to address the bull component of the beef cattle enterprise through live animal demonstrations. Three different assessment and evaluation criteria will be applied to bull selection. Demonstrations and discussion of phenotypic-live animal, ultrasound, and fertility and breeding potential evaluations, along with matching bull selection to the cow herd will give participants a comprehensive experience in bull selection and evaluation. The annual Cattlemen’s Steakout on Thursday evening provides an event for all participants to enjoy a prime rib dinner and time for conversation and relaxation. On Friday, the program highlights the University of Florida’s emphasis on production practices. The program will present some of the recent research and production methods that UF researchers are exploring to improve beef production in Florida. Topic areas will include backgrounding calves with co-products, replacement heifer management, factors affecting the value of calves from Florida, application of bio-solids as fertilizer sources, and utilization of limpograss for grazing. The 2008 Florida Beef Cattle Short Course promises to continue the tradition of being the best educational event for beef cattle producers in the Southeast. The spectrum of topics related to beef production, marketing, and selection of bulls should provide something for every beef cattle producer regardless of size. Make plans to attend the Short Course and come away with new and innovative knowledge about the beef cattle industry.

Registration Information
The reduced early registration fee is $110.00 if payment is postmarked by April 18, 2008. After April 18, 2008, the regular registration fee will be $150.00.

The registration fee includes refreshment breaks, exhibitor’s reception, Thursday’s luncheon, one Cattlemen’s Steak-out ticket, and proceedings. Extra Cattlemen’s Steak-out tickets are available at $15.00 each. Please refer to the registration card to purchase extra tickets.

CONVENIENTLY REGISTER IN ONE OF THREE EASY WAYS:
1. ONLINE: register online at: http://conferences.dce.ufl.edu/basic/214.aspx
2. FAX: If paying by credit card, FAX completed registration form to: (352) 392-9059
3. MAIL: Please make check, money order, or purchase order payable to:

UF Foundation
Mail this form with payment to:

Beef Cattle Short Course
UF/IFAS Department of Animal Sciences
P.O. Box 110910
Gainesville, FL 32611-0910

PLEASE PRINT Fed. ID: 59-0974739

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Expiration Date: _________ Security Code: ___

Name of Cardholder: ______________________

Amount: ____________________________

Signature: ____________________________

Hotel Accommodations/Meeting Site
The Hilton University of Florida Conference Center, is offering a special group rate of $139.00 single or double occupancy, plus 9.25% tax. To qualify for this special rate, reservations must be made prior to March 24, 2008. Please call the hotel directly at (352) 371-3600 to make your reservation and inform the
attendant you are with the “Beef Cattle Short Course” in order for Hotel Reservations to recognize you as a Beef Cattle Short Course participant. After the deadline, the discounted group rate and guest room availability are no longer guaranteed.

Beef Cattle
Management Tips

**MARCH**
- Prepare land for summer crops.
- Begin grazing warm season permanent pastures.
- Check and fill mineral feeder.
- Observe bulls for condition and success.
- Rotate and rest bulls as necessary.
- Deworm cows as needed.
- Observe calf health and provide adequate nutrition for “good” weight gains.
- Hang forced-use dust bags by April 1st for external parasite control or use insecticide impregnated ear tags.
- Identify, vaccinate, implant and work late calves.
- Put bulls out by March 1st for calving season to start December 9th.
- Remove bulls March 22nd to end calving season January 1st.

**APRIL**
- Plant warm season and perennial pastures.
- Plant corn for silage.
- Check and fill mineral feeder.
- Check dust bags or apply treated ear tags.
- Check for external parasites and treat if necessary.
- Observe cows for repeat breeders.
- Deworm cows as needed if not done in March.
- Deworm cows as needed if not done in March.
- Vaccinate against blackleg and brucellosis after 3 months of age and prior to 12 months of age.
- Market cull cows and bulls.
- Update market information and refine market strategy for calves.