Whether working with a familiar gentle horse or an unfamiliar temperamental horse, safety is of the utmost importance. Horses are animals of prey, which explains many of the behaviors they demonstrate. For example, when afraid, their instincts tell them to either run or fight. Combined with a much different field of vision than humans, a hazardous situation can happen quickly. Safety and care become even more important when working with unfamiliar horses or stallions.

When leading a horse, it is best to use a long lead shank and always hold it with both hands. If the horse rears up, release the hand nearest the horse to avoid being pulled with the horse. Lead the horse from the left side, using the right hand to hold the lead nearest the horse. The excess portion of the lead should be rolled and held in a figure-eight style with the left hand. The handler’s elbow can be used to keep the head and neck straight as well as prevent the horse from crowding the handler’s space, potentially knocking the handler over or stepping on the handler’s feet. It is good to occasionally lead the horse from the right side so the horse becomes familiar with being handled from either side. For example, when loading a horse on a trailer, the handler may have no other option than to lead from the right side.

Never roll the excess lead shank or lead rope around the hands, wrist or any other part of the body. If the horse runs off when being led in this manner, the handler can potentially become entangled in the lead shank and be dragged. Most lead ropes have a knot at the end of the rope. The knot aids in maintaining a secure grip when needed for control. If the lead rope or lead shank does not have a knot at the end, make one immediately. It is also a good idea to avoid wearing jewelry while handling horses. Rings can cut deeply into fingers and earrings can easily be caught in reins or lead shanks.

Caution should be used when leading a horse through a narrow opening. Horses have a tendency to panic when being led through a small opening and can consequently try to rush through. This can present a problem for a handler if he or she is not in proper position. The handler should step through the opening quickly and step to one side to avoid crowding the narrow opening or doorway.

Carefulness should be used when turning a horse loose in the pasture, arena or round pen. Lead the horse completely through the gate or door, and turn the horse around facing the direction from which it just entered. Remove the halter slowly and carefully. Use caution to avoid allowing the horse to bolt quickly.

Good habits can prevent accidents. To reduce the chances of becoming entangled, avoid using excessively long lead ropes. Take your time when handling your horse. Remember the old saying when handling your horse, “Take more time, so it takes less time.”
Clovers for Stocker Cattle Grazing Bermudagrass

Dr. Paul Beck, Associate Professor

Clovers provide many benefits to pastures for stocker producers. Most people consider the ability of clovers and other legumes to fixate nitrogen from the atmosphere the primary benefit they offer our pastures. Clovers provide additional benefits to grass pastures because they are higher in digestibility, they grow well as a companion crop to grasses and their mineral profiles are naturally complementary to deficiencies in grass pasture and provide early grazing opportunities for warm-season pastures.

There are several options available in planting clovers in the Mid-South with a variety of benefits, growing seasons and maturity dates. White clover is a cool-season perennial that is productive throughout Arkansas, tolerates soils that are not well drained, is cold tolerant and matures in late spring or early summer. Red clover is a cool-season biennial or weak perennial in Northern Arkansas, requires well drained soils, is cold tolerant and matures in mid-summer. In the past few years new varieties of both white and red clover were developed that are more productive and disease resistant in conditions found in the Southeastern United States.

Research conducted in 2009 at the University of Arkansas Livestock and Forestry Branch Station near Batesville compared the gains of stocker calves and carrying capacity of bermudagrass pastures interseeded with a mixture of red and white clovers to bermudagrass pastures fertilized with 0, 50 or 100 lb N/acre (which came from 0, 150 and 300 lb of ammonium nitrate/acre). Bermudagrass pastures were interseeded with 2 lb/acre RegalGraze Ladino white clover and 10 lb/acre Morningstar red clover in October 2008 with a no-till drill. Other bermudagrass pastures were either unfertilized or had 75 or 150 lb/acre ammonium nitrate applied in May and July. Pastures were divided into four paddocks and rotated weekly. Steers weighing 611 lb grazed these pastures from May 29 to September 9.

Crude protein and energy are essential for growth. A steer gaining 2 lb/d requires a diet that has at least 12% crude protein. Throughout the summer, all pastures were in excess of 12% crude protein and averaged in...
The winter of 2009 was one to remember with extended periods of record low temperatures and above average snowfall. Not to mention the rain. But, in spite of all the adverse weather conditions, spring has sprung! Days are getting longer, temperatures are rising and grass is beginning to grow. Soon there will be excess grass that will need to be harvested and stored for winter feeding. The method in which hay is stored will have an impact on the amount of hay required to carry the herd through the winter.

In 2009, five hay storage loss demonstrations were conducted in four counties: Calhoun, Fulton, Izard and Union. Storage methods included 1) outside, on the ground, uncovered, twine wrapped; 2) outside, elevated on tires, uncovered, twine wrapped; 3) outside, on the ground, uncovered, plastic net wrap; 4) outside, stored on concrete, uncovered, plastic net wrap; 5) barn, twine wrapped. The average hay quality of the bales was 11.1% protein and 58.1% TDN. The bales used measured 4’ x 5’ with an average dry matter weight of 674 pounds.

Several observations were made on storage losses over an average 237-day storage period. The greatest dry matter loss, 25.4% or 170 lb, was associated with bales that were stored outside, on the ground, uncovered, twine wrapped. Twine-wrapped bales showed significant deterioration along the twine valleys, penetrating several inches into the bale. Significant deterioration was also seen on the bottom of the bales where the bales were in contact with the ground. The higher moisture content at the bottom of the bales stored on the ground, outside, causes the hay to decay more rapidly, resulting in dry matter loss.

One study compared bales stored outside, on the ground, uncovered, twine wrapped with bales stored outside, elevated on tires, uncovered, twine wrapped. Storing the bales on tires reduced waste from 22.6% to 19.8%, a 12% reduction. In a Louisiana study, 10 percent less hay was lost from handling and storage when hay was stored on a wooden rack versus being stored on the ground.

Plastic net wrapping was an effective way of reducing loss associated with hay being stored outside. Hay that was stored outside, on the ground, uncovered, plastic net wrap had an average dry matter loss of 13.3% or 86 lb. No benefit was seen in this study by storing the hay on concrete. This is likely due to the fact moisture was being trapped beneath the bale and the hay that was stored on the ground was at a well-drained site.

The least amount of dry matter loss, 9.6% or 66 lb, was associated with bales stored in a barn, twine wrapped. A permanent hay shed is the best method of minimizing storage losses. However, the cost of building a hay barn must be compared with the cost of expected hay losses. In addition, hay harvested too wet and stored in a barn can result in a fire. Losses from poor quality hay are not as severe as losses from high quality hay. If there is not enough cover to store all hay, put the best quality hay under cover.

Before changing current hay storage practices on the farm, several items should be considered. The first is cost. Gather enough data (Table 1) to determine what losses would be expected under the current condition and losses under the alternative to discover the net value of conserved (or lost) hay. Second,
evaluate hay quality. Obviously, invest in protecting the highest quality hay. If hay quality is low, losses will be minimal. Third, evaluate the life expectancy and labor involved in storage. Barns provide the best protection and smallest loss, but barns also have the greatest investment cost. The initial investment in a tarp is far less; however, the life expectancy of a tarp is short (some manufacturers offer a three-year warranty). In addition, a tarp has no benefit if it stays blown off its stack. Storing hay on structures to reduce moisture wicking should be approached with caution. Aggregate provides a well drained surface, but gravel size aggregate has resulted in cows breaking teeth from rock that gets caught up in the hay. Some producers have used tires. Be aware that belting caught in hay could lead to hardware disease. Broken pallets should be discarded to avoid the potential for hardware disease as well.

**TABLE 2. Results of the Hay Storage Loss Demonstrations**

<table>
<thead>
<tr>
<th>County</th>
<th>Days in Storage</th>
<th>Storage Method</th>
<th>Hay Quality %CP, %TDN</th>
<th>Dry Matter Weight of Bale @ Harvest (lb)</th>
<th>Dry Matter Weight of Bale After Storing (lb)</th>
<th>Dry Matter Loss (lb)</th>
<th>Dry Matter Loss (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calhoun</td>
<td>244</td>
<td>Outside, ground, uncovered, plastic twine</td>
<td>12.3%CP 64.2%TDN</td>
<td>601</td>
<td>517</td>
<td>119</td>
<td>19.72</td>
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<tr>
<td></td>
<td></td>
<td>Barn, plastic twine</td>
<td>12.3%CP 64.2%TDN</td>
<td>611</td>
<td>548</td>
<td>48</td>
<td>7.92</td>
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<tr>
<td>Fulton</td>
<td>231</td>
<td>Outside, ground, uncovered, plastic twine</td>
<td>10.4%CP 53.4%TDN</td>
<td>673</td>
<td>574</td>
<td>149</td>
<td>22.59</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outside, elevated, uncovered, plastic twine</td>
<td>10.4%CP 53.4%TDN</td>
<td>677</td>
<td>597</td>
<td>132</td>
<td>19.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barn, plastic twine</td>
<td>10.4%CP 53.4%TDN</td>
<td>708</td>
<td>649</td>
<td>59</td>
<td>8.2</td>
</tr>
<tr>
<td>Fulton</td>
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<td>Outside, ground, uncovered, net wrap</td>
<td>11.5%CP 54.7%TDN</td>
<td>644</td>
<td>593</td>
<td>86</td>
<td>13.29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outside, concrete, uncovered, net wrap</td>
<td>11.5%CP 54.7%TDN</td>
<td>682</td>
<td>650</td>
<td>85</td>
<td>12.55</td>
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<tr>
<td>Izard</td>
<td>228</td>
<td>Outside, ground, uncovered, plastic twine</td>
<td>10.7%CP 53.6%TDN</td>
<td>661</td>
<td>521</td>
<td>211</td>
<td>31.94</td>
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<tr>
<td></td>
<td></td>
<td>Barn, plastic twine</td>
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<td>577</td>
<td>86</td>
<td>12.99</td>
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<tr>
<td>Union</td>
<td>250</td>
<td>Outside, ground, uncovered, sisal twine</td>
<td>10.4%CP 64.6%TDN</td>
<td>734</td>
<td>565</td>
<td>203</td>
<td>27.44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barn, sisal twine</td>
<td>10.4%CP 64.6%TDN</td>
<td>765</td>
<td>693</td>
<td>72</td>
<td>9.13</td>
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</tbody>
</table>
It's All About Cheese
Wayne Kellogg, Professor

The price dairy farmers received for milk declined dramatically after October 2008 when export market demand declined and did not hit bottom until May 2009. The recovery has been extremely slow, because there is just too much cheese in storage.

Excessive milk cannot be kept, so it must be stored as a stable product, generally either cheese or dried milk. About 10 pounds of milk is required to make a pound of cheese. However, in 2009 the amounts of cheese in storage continued to increase until July. Obviously, cows do not stop producing just because demand drops. Once that peak of storage of cheese occurred, the prices paid for cheese began recovering. Then the price paid to farmers also began increasing. By December 2009, farmers in Arkansas received an average of $16.46 per 100 pounds (cwt) of milk, up from $11.71/cwt in May 2009. Farmers receive a blend price based on the proportion of milk used for Class I (milk used for beverage products), Class II (milk used for manufacturing soft products including ice cream, yogurt and condensed milk), Class III (milk used for cheese) and Class IV (milk used for butter and dry milk products). While prices vary for the different classes, the entire pricing system is sensitive to the price paid for cheese. That system is receiving considerable attention after the very difficult year in 2009. Fluid milk is the perishable product and perhaps should have been buffered from the sharp decline in prices of other products. However, the pricing system is complicated.

New Herbicides for Summer Grass Control in Bermudagrass
John Jennings, Professor, Blair Griffin, Staff Chair, and Bob Scott, Professor

“We what will control crabgrass and other summer grass weeds in my bermuda hay meadow?” is an annual question, and the short answer has been that nothing is labeled for this application. But that may have changed this year with two new herbicide products coming into the forage market. These products are Prowl H₂O by BASF and Pastora by DuPont. Both will be labeled only for established forage bermudagrass.

BASF announced the new label for Prowl H₂O in January for use on forage bermudagrass. The active ingredient in Prowl H₂O is pendimethalin which has been used for years for annual grass control in certain row crops, turfgrasses and ornamentals. This new use for Prowl H₂O is on a supplemental label posted at <http://www.cdms.net/LDat/ld6CT014.pdf>.

For many years, producers of high-quality bermudagrass hay have needed a preemergence herbicide for the control of crabgrass, goosegrass, Texas panicum, sandbur and other summer annual grasses. At this time, Prowl H₂O will be labeled for applications to only dormant bermudagrass. Prowl H₂O may be applied to forage bermudagrass grown for hay or pastures and should only be applied to established bermudagrass when dormant in the late winter and early spring months.

The main key to using this product is timing. Applications made too early may allow the product to dissipate before weeds germinate and those made too late won’t control emerged weeds. The active ingredient in Prowl H₂O will only control annual weeds as they germinate and will not control weeds after they emerge. Crabgrass is one of the earliest emerging grassy weeds. It begins to germinate when soil temperatures average 55°F, so late winter or very early spring applications are needed for effective control. According to U of A weed scientist Dr. Bob Scott, rainfall needs to occur within 10 days of application to move the herbicide into the soil for activation. If dry conditions occur after application, control effectiveness will be reduced.

Recommended rates of Prowl H₂O range from 1.1 to 4.2 quarts per acre, but research in other states has shown that rates of 2.1 to 3.2 quarts per acre are needed for season-long annual grass control. The product may be applied in spring when the bermudagrass is dormant or it may be applied in two split applications. The first split should be applied at onset of winter and the second application must be made prior to spring greenup. It may be tank-mixed with other herbicides registered for use on forage bermudagrass, which may help control any emerged weeds. Dr. Scott also says applying this product on thin or winter damaged bermudagrass stands may slow stolon development and subsequent filling-in of thin areas of the field. Harvest restrictions state that Prowl H₂O should not be applied less than 60 days prior to bermudagrass hay harvest or less than 45 days before grazing.

DuPont is about to launch a new product called Pastora that combines metsulfuron (formerly known as Ally) andnicosulfuron (known as Accent) –
two previously proven herbicides. The label for use on established forage bermudagrass is expected in April 2010. Pastora gives preemergence control of broadleaf weeds and postemergence control of grassy weeds, particularly johnsongrass and sandbur. Since it only gives postemergence control of grasses, it is an option for situations where early dormant herbicides could not be applied. Crabgrass, sandbur and signalgrass and others must still be small for good control. Application rates are 1 to 1.5 ounces/acre with non-ionic surfactant or crop oil concentrate at 0.25-0.5% v/v. Total application rates should not exceed 2.5 ounces/acre per year. Application is recommended in late winter/early spring when bermudagrass is dormant or very soon after hay cutting to reduce any possible injury to the bermudagrass. Including UAN liquid fertilizer in the tank mix also reduces any injury. According to Johnson County Agent Blair Griffin, Pastora controls a wide spectrum of broadleaf and grassy weeds, but tank mixing with 1 quart of 2,4-D will improve control of thistle, ragweed and plantain. This product is not a burn-down type herbicide so weed control may appear to be slow. However, weed growth ceases within hours of application and the weeds begin to develop yellowing symptoms within several days. Complete death may take three to four weeks. There is no grazing or hay harvest restriction expected for this product on bermudagrass.

Timely application is a major consideration for applying these herbicides, but used correctly, either one should provide some relief for the age-old summer grass weed problems in forage bermudagrass.