



Perry County Livestock



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Legumes - An Option to Save Nitrogen Fertilizer Costs?

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Beef farmers struggle to come up with the financial resources to fertilize their pastures to keep cattle operations viable. As you may have read in the January issue of this newsletter and surely know from your own experience, fertilizer prices are at an all-time high, and there's little hope they will come down ever again. Moreover, the pending lawsuit between Oklahoma and Arkansas regarding the future of poultry litter application has put many farmers in limbo as to what extent this kind of fertilizer might be available for future use.

Legumes may be an option for lowering fertilizer costs while improving forage nutritive value of pastures. However, one word of caution right at the beginning: There's certainly no silver bullet available to easily offset high fertilizer prices. While many people think that legumes can do the job, they require patience, improved grazing management practices and some personal experimentation.

Forage legume species have the ability to fix atmospheric nitrogen through a symbiotic

relationship with the bacteria that colonize their roots. These bacteria are responsible for converting nitrogen into forms that are usable by the host plant. About 30 to 95 percent of the total plant nitrogen requirement may be provided in this way. It is important to know that nitrogen transfer to grasses usually occurs indirectly from leaf drop or plant death of legume plants and much less through intermingling plant roots.

Significant redistribution of fixed nitrogen is mediated by animals grazing legumes and depositing dung and urine within the same pasture. However, while nitrogen fixation of legumes in a pasture might be sizable, actual nitrogen transfer to the pasture grass will be much lower. For example, in a white clover-fescue mixture, the annual nitrogen fixation might be between 80 and 160 pounds/acre. The annual transfer, however, may only be 20 to 40 pounds/acre.

When considering legume species for your pastures, you should choose those legume species that best fit your production objectives. There are annual and perennial

legumes that differ in growth habit, reproductive cycles and management requirements. A few producers have utilized white and red clover in the past, but there are many more legumes species to consider.

We recently initiated a study at the Batesville Research Station with the goal to provide producers with information on persistence and contribution of nitrogen of various legume species. During the next three years, we will monitor forage yield, soil quality and economics, among other factors. Annual legumes used in our study included 'Yuchi' arrowleaf clover, 'Dixie' crimson clover (picture), common hairy vetch and 'Denmark' subterranean clover. For perennial species we selected 'Ameristand 403T' alfalfa, common kura clover, 'Cinnamon Plus' red clover and 'Durana' white clover.

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“... there will be plenty of education, fellowship, food and fun.”

American Breeds Coalition to Hold Arkansas Beef Producer Seminar^r

The American Breeds Coalition, an organization comprised of Beefmaster, Braford, Brahman, American Red Brangus, Santa Gertrudis and Simbrah, in cooperation with the University of Arkansas and the Arkansas Cattlemen's Association, will hold a beef cattle producer seminar at the Pauline Whitaker Animal Science Center on the campus of the University of Arkansas in Fayetteville on May 31, 2008. This program is free, open to all cattlemen and will consist of some of the top industry leaders sharing their experiences with the utilization of American Breeds cattle. The following is a schedule of events:

9 a.m. – 9:20 a.m. **Welcome** – Dr. Charles Graham, President, American Breeds Coalition; Dr. Keith Lusby, Head, Animal Science Department, University of Arkansas; and Charles Rodgers, Jr., President, ACA

9:20a.m. – 10 a.m. **Utilizing American Breeds to Improve Performance in the Cow Herd** – Dr. Tom Troxel, University of Arkansas, Animal Science Department

10 a.m. – 10:45 a.m. **Utilizing American Breeds Bulls in Commercial Cow Programs** – Dr. Bob Kropp, Oklahoma State University, Animal Science Department

10:45 a.m. – 11:30 a.m. Break and Visit Trade Show

11:30 a.m. – 12:30 p.m. **Lunch** – Sponsored by the Brahman, American Red Brangus, Beefmaster, Simbrah, Braford and Santa Gertrudis Breeds

12:30 p.m. – 1:30 p.m. **How the American Breeds Fit the Feeder, Packer and American Consumer** – Dr. Gary Smith, Colorado State University – Fort Collins, Animal Science Dept.

1:30-2 p.m. **The Best Way to Market American Breeds and Their Crosses—Marketing Panel**

2 p.m. **Adjourn**

We hope you make plans to attend this great program as there will be plenty of education, fellowship, food and fun. If you plan to attend this program, please RSVP **before May 27, 2008**, to American Breeds Coalition Treasurer, **Wendell Schronk** at **210-732-3132**. The Pauline Whitaker Animal Science Center is located at 1335 West Knapp in Fayetteville.

Volunteers Needed for Hay Testing Demonstration



“Volunteers are needed for Hay Demonstration”

One of the recommendations made for programming this year was to demonstrate the importance of hay sampling. I am now in the process of recruiting volunteers to have their hay tested. I would like to work with (4) producers that are planning on putting up hay this year. The following production practices will be tested: (1) Hay from winter annuals and clover (2) Hay from ground that has not been fertilized this year (3) Hay that has been fertilized with commercial fertilizer (4)

Hay that has been fertilized with chicken litter. If you are interested in taking part of this demonstration, please call the Perry County Extension office.

After the samples are tested, we will look at recommendations for supplemental feeding for cattle in different life stages. Hopefully, by doing this study, we will be able to help you make better management decisions. This is especially important in today's market where input costs can make or break an

operation.

Normally the cost of the test is \$18. We should be able to offset this cost for producers in the trial. Even if you are not in the trial, this is a good price. If you cut down feeding costs by eliminating less than two bags of feed, you will have paid for the test. An added benefit is that you can show buyers the report, if you choose to market the hay off of the farm.

Get Your Horse Physically Fit for Maximum Performance - Dr. Steve Jones

The weather is warming up, and many of us are thinking about spending time in the saddle. Whether you are preparing for competition, trail riding or training a young horse, the horse will be a more willing partner mentally, if you get him in shape physically. Horses that have received limited exercise for an extended period of time should not be expected to perform the same tasks as when they were highly conditioned. A planned exercise program will not only get your horse in shape to perform his or her assigned task but may also prevent injury. Any time you exercise a horse, stress is placed on the horse's bones and tendons. The skeletal system needs to be prepared for the intensity of work to be performed.

In general, a conditioning program should begin with lower-speed, long distance exercise. This is commonly referred to as long, slow distance work. The distance will need to increase from a negligible amount to longer distances. Long, slow distance work does not refer to how far a horse goes. Rather, this type of work refers to the amount of time (days) a horse is exposed to low heart rate, aerobic exercise. This early phase of cardiovascular conditioning should take place over a period of 30 days. Exercise will consist of walking, trotting, extended trot, loping and some cantering. These exercises are categorized as "aerobic" because the horse's heart rate will almost always be less than 150 beats per minute. Exercise contributes to skeletal maintenance, because bone will lose its strength if not used. Care should be taken to go slow so that proper skeletal strength is built during early stages of conditioning.



Although it only takes about one month to develop a significant amount of aerobic, cardiovascular fitness in horses, development of the tendons and bones often takes much longer. Therefore, the horse person is challenged to spend enough time in the legging-up phase to help prepare the skeletal system for the intensity of work to which a horse will later be exposed. Excess muscular fatigue can certainly contribute to lameness.

Both quality and consistency of movement become compromised during fatigue and the end result is lameness or a significant soreness of some kind. So, effective conditioning programs don't and shouldn't result in highly exhaustive work during each workout. To improve cardiovascular fitness, the work must eventually involve some exercises that will cause the heart rate to move into the range of 150 to 180 beats per minute.

The next step is to focus on the specificity of exercise. Specificity of exercise is a concept which is of extreme importance. Put simply, this concept says that if you want to be a fast runner, you must train by running fast, or if you want to be a good long distance swimmer, you must train by swimming long distances. You cannot become a fast runner by swimming long distances or a swimmer by running. Although that sounds very simplistic on the surface, the consequences are far-reaching. For example, if a horse runs a mile today at a four-minute pace, his body will respond by storing fuel and rebuilding tissue so that he can run a four-minute mile tomorrow with greater ease. However, he will not be fit to run a mile at a two-minute pace. The exercise he performed in training specifically geared him for running a four-minute mile. In conclusion, a horse must be exposed to the requirements in his or her specialty. Cutters must be able to run, stop and turn for 2 1/2 minutes. Barrel horses must be able to maintain their speed and turn for the entire duration of the pattern. A trail horse must be able to cover the distance desired, plus climb, trot or canter as needed.

Conditioning of the performance horse can and will be influenced by a variety of factors: body condition, nutrition level, environment and purpose of the training. An exact recipe cannot be used for all horses, because horses differ in ability, behavior and strength. But there are two fundamental considerations - cardiovascular, aerobic conditioning and specificity of exercise. It boils down to getting the horse physically fit first and then training him or her specifically for the performance event.

Developing Your Pasture Brain - Dr. John Jennings, Professor

It's no secret that costs of nearly every input for pasture production have increased drastically over the past year. I say nearly every input because the main input that hasn't increased in cost is your pasture management skill. You could call it your "pasture brain." Since it is still an economical input, you should try to use your pasture brain at every opportunity. The more you use it, the stronger it gets. A good way to exercise and develop your pasture brain is to question everything you do with your pastures, even if you are sure you are doing it right. You may find you are right on the money with some practices but either haven't made time to try others or didn't feel comfortable doing something you haven't done before. In this article are some questions that should give your pasture brain a good workout.

Cows need to graze 365 days a year, but do you have grazeable pasture all year? If not, think about what type and amount of forage you have in spring, summer, fall and winter. Inventory your forages. Good forage composition should be about two-thirds cool-season forage and one-third warm-season forage in North Arkansas, and in South Arkansas, a ratio of half and half to two-thirds warm-season and one-third cool-season forages works well. Do you have warm- and cool-season forages to provide grazing during all seasons? Forage is still the cheapest feed for grazing livestock.

Do you have seasons when pastures typically fall short of supplying enough grazing – maybe during summer drought, late fall, even in winter? Do you rotationally graze your pastures? Rotational grazing can improve utilization of forage from 35 to 65 percent and improve forage performance. That can be very important in years when you cut back on fertilizer due to high costs. Rotational grazing can extend the growth of forage longer into a drought period than allowing cows to continuously graze. Rotating pastures twice a week can provide 40 percent more grazing days per acre than rotating pastures twice a month. Changing from continuous grazing to rotational grazing can have more impact on extending your grazing season than any other single practice.

Do you use soil tests to guide fertilizer applications? Soil test recommendations include recommendations on when to apply fertilizer for the best forage growth. Soil tests are virtually free in Arkansas. In Missouri, the cost is \$15 per sample. Can you afford not to use free soil tests? Soil tests show which fields need fertilizer the most and which ones need less. So even if you have a limited fertilizer budget, you know where it

will do the most good.

Do you make efforts to control weeds? Rotational grazing can make your cows clean up many grazeable weeds, and judicious use of herbicide can control those not grazed. Annual ryegrass, if well-managed, can crowd out many of those spring weeds like buttercup, cheat and little barley while supplying excellent spring pasture.

Do you feed hay more than 60 – 70 days a year? If so, is it because you enjoy feeding hay during cold, wet, muddy weather? Stockpiling bermudagrass or tall fescue to graze in late fall and winter can save about \$20 per cow compared to the cost of hay (not counting the cost of feeding the hay) and can shave weeks to months off the hay feeding season. Strip-grazing the stockpiled forage saves about \$10 per cow more than uncontrolled continuous grazing and nearly doubles the number of grazing days from the stockpiled forage. Moving a single electric fence polywire takes about 30 minutes twice a week. How long does it take you to feed hay each day?

Do you grow winter annual forages such as wheat or ryegrass? Winter annuals can reduce days of hay feeding in late winter and provide excellent supplemental forage. Arkansas research showed that grazing cows two days per week on one fourth of an acre of winter annual pasture per cow and feeding hay the other days was as good as feeding cows a complete balanced ration. Did I also mention that ryegrass can help control certain weeds and provides spring pasture when bermudagrass is still dormant?

Do you grow legumes? Clover reduces fescue endophyte effect on livestock, reduces nitrogen fertilizer need, adds spring grazing and improves forage quality. Research in Texas showed that arrowleaf clover grown on bermudagrass sod fixed enough nitrogen and produced enough forage to replace over 110 pounds of fertilizer nitrogen per acre. At current prices, that equals \$72 per acre. Many legumes require higher soil fertility than most grasses, but some can grow well even at low soil fertility levels. Did I mention that soil tests show the fertility levels of pastures and can serve as a guide to determine where legumes might grow best?

Answering these questions should stimulate your pasture brain. Changing forage management practices will stimulate it even more and will begin to stimulate the neighbor's pasture brain as well. So get up and start exercising!

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