Brucellosis Vaccination Clinic  
**Tuesday, May 13th**

Producers may schedule heifers, 4 to 12 months of age, for calf hood brucellosis vaccinations. The on farm vaccinations will be available County wide in cooperation with a State vaccinator from the Arkansas Livestock and Poultry Commission.

To have calves vaccinated they must be penned and ready. Adequate corrals and working facilities are required, and producers should be present during vaccination procedures.

To enroll in the program, call the Extension office at (479) 667-3720 or 965-2272 by Friday, May 9th. Information on number of animals, location of farm and phone numbers are needed. There is no charge for the service or visit. Producers will be contacted about the stop schedule by phone.
Injectable Minerals Have Their Place – Michael Sullivan

As I flip through livestock magazines and talk to producers, I continue to see more and more exposure to the injectable mineral substances like Multimin. Many research trials have taken place in Arkansas, Texas, Oklahoma, Tennessee, and Kansas and have found many interesting results. Within these trials, several aspects of cattle production were inspected with an injectable mineral program and appealing results were seen. Such trials include:

- Newly received calves to farm (stocker/feeder calves)
- On-farm raised calves post weaning
- Pre-weaning injections for on-farm raised calves
- Cow-calf pair injections
- Mature Cows- Conception and pregnancy rates-pre/post partum body weight

Based on these studies, injectable minerals have a positive application in some settings but they are not beneficial in every livestock operation. Cattle procured from auction markets and exposure to the combined stressors of weaning, marketing, and co-mingling showed a beneficial reaction to injectable minerals. Research at the University of Arkansas found that newly received calves given an injectable mineral solution gained 21 percent more weight per day than calves that were not given an injectable mineral. If raising feeder calves and aiming at 3 lbs of daily gain, an additional 21% works out to be over a half pound of extra gain per day. That translates to over 50 lbs of extra gain for a 90 day period. The other instance where injectable minerals proved to be beneficial was in operations with an intensive artificial insemination (AI) program. All other mature cow research with injectable minerals did not show to be effective in increasing conception or pregnancy rates, pre/post partum body weight, or increase cow-calf production when given in pairs. Keep in mind that injectable minerals like Multimin is a prescription item and approval from your local veterinarian is required. Injectable mineral internal cost can range in the $0.52-0.58 per mL (cc) so it would be between $2.20-2.50 per 400 lbs calf. Contact your local veterinarian or the extension service for more information.

Photo courtesy of Rutgers University

Red Sorrel-Rumex acerosella

Red Sorrel is an herbaceous perennial that have a distinct arrow shaped leaf with red to red-brown tip color. Red sorrel grows often in areas of low fertility or poor drainage and thrive exceptionally well in acidic soils. This weed is commonly seen on roadsides and houses an extensive shallow horizontal root system. The weed grows in patches, so if seen in pastures it will be in localized areas. The creeping horizontal roots give rise to shoots. The plant also has the ability to form clones that vegetatively reproduce for an unlimited duration. One clone may be decades old and seed can remain viable 10 to 20 year time span. Fertilizer, liming, and improved drainage will allow other plants to outcompete red sorrel. Herbicides that effectively control red sorrel are Grazon P+D, Metsulfuron, Cimarron Plus and treat anytime the weed is actively growing. While red sorrel remains a problem in pastures, it may also poison livestock if sufficiently consumed in high enough quantities.
Technology in Beef Production:
How We Will Feed a Growing Population
Paul Beck, Professor

Norman Borlaug has been credited for revolutionizing agriculture in the third world by developing disease resistant, high-yielding varieties of food crops and emphasizing the use of intensive cropping through fertilizers and herbicides. Wheat yields in the third world have increased by over 250 percent from 1950 to 2000. This was instrumental in the Green Revolution which is credited with saving a billion lives from starvation in Mexico, India and Pakistan. One of Dr. Borlaug’s theories is that increased production on the best cropping acres will decrease the demand for land and thus decrease deforestation.

It has been estimated that we must again double food production by the year 2050 due to population growth worldwide. There is also increased demand for animal proteins in diets of people worldwide. This demand must be met even though there is limited availability of arable land. Seventy percent of the increased food production must come from efficiency-improving technology. Improved production efficiency through technology has multiple benefits: 1) dramatically reducing production costs; 2) reducing land needed to produce an equivalent amount of food for consumers; 3) limiting the production of greenhouse gasses per unit of food produced; and 4) decreasing food costs to consumers. Reproductive technologies in beef cattle can be used to improve production efficiency. An old technology that has been largely forgotten in current production is heterosis or “hybrid vigor,” defined as the added advantage in performance of a crossbred over the average of its purebred parents. The improvement from hybrid vigor is 6 to 8 percent for maternal traits like calving rate and weaning rate, 11 percent for weaning weight and up to 38 percent for traits like cow longevity.

Other underutilized technologies in the beef industry are artificial insemination and estrus synchronization, which allows the use of genetically superior bull genetics without owning the bull and also allows the use of fewer bulls in multi-sire herds (cowherds with 50 or more cows). In using estrus synchronization (increasing early calves and compacting the calving season), artificial insemination (using superior bulls) and crossbreeding in cleanup bulls (to get the hybrid vigor of natural service calves), a 50-cow herd can increase net returns by nearly $4,500.

Forage production technologies can be used to increase the productivity of our ranches. Fertilization of hay meadows with 50 units of N after each harvest can increase forage yield by 27 pounds of forage per pound of N at a cost of less than 3 cents per pound of grass. Research at the Livestock and Forestry Research Station near Batesville shows that fertilizing bermudagrass pasture with 50 units of N per acre per season will increase carrying capacity by 5 percent and increase gains by 1.5 pounds per pound of N. Forage varieties that are selected for increased growth and persistence can improve animal production and health to a large extent. Inserting nontoxic endophytes into tall fescue varieties increased animal performance by 100 percent, eliminated fescue toxicosis and increased reproductive rates by 80 percent.

Growth-promoting technologies have been used for over 50 years. Anabolic steroid implants are safe and effective growth-promoting agents used in over 90 percent of feedlot cattle. Implants increase growth rate by 10 to 30 percent, feed efficiency by 5 to 20 percent, and carcass weight by 5 to 10 percent. Ionophores are compounds that alter the population of rumen microbes, increasing the metabolic efficiency of cattle and decreasing the amount of greenhouse gas.
production. Ionophores increase growth by 5 to 20 percent and feed efficiency by 20 to 25 percent. Beta agonists are the newest growth-promoting technology. They act similar to naturally-occurring compounds like epinephrine and norepinephrine (or the asthma medicine Clenbuterol) and are fed only during the final 20 to 48 days of finishing in the feedlot. Beta agonists increase slaughter weight by about 2 percent but increase hot carcass weight by 5 percent because of a large increase in muscle deposition and reduction in fat. Due to increased technology, to produce the same amount of beef as we produced in 1977, we require 30 percent fewer animals, 19 percent less feed, 12 percent less water and 33 percent less land, meaning we are more sustainable now than ever before.

It is important to remember that all production systems can be sustainable. Improvements can be made to any production system to make it more sustainable. The beef industry is big enough for all types of production. Consumer choice is an important part of our society, and we should do nothing to limit food choice. And technology is and always will be important for production of a sufficient, affordable and safe food supply.

### Warm Season Perennial Forages

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| Seeding Rate  | Drilled-12 lbs/A | Drilled-4 lbs/A(Hulled) | **Big**-5-10 lbs/A | Drilled-2-4 lbs/A
|              | Broad-15-18 lbs/A | Broad-6-8 lbs/A | **Old World** | **Old World**-2-3 lb/A
|              |                | Sprig-20-40 Bushels/A | Drilled-2-3 lb/A | Broad-3-5 lb/A |
| Est. Yield    | 5.2 Tons/A     | **Common**-5.8 Tons/A | **Big**-4.5Tons/A | 4.3 Tons/A    |
|              |                | **Hybrid**-7.9 Tons/A | **Old World**-7.3 Tons/A |           |
| Survives Low Fertility | Yes | Common-yes Hybrid-no | Yes | yes |
| Cost per lbs  | $3.16/lbs | $4/lbs | $13/lbs | $4.50/lb |