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LSU AgCenter Research & Extension

Animal Industry News Update

from the LCES Animal Science Specialists

Animal Health (Dr. Christine Navarre)

The production of safe and wholesome animal products for human consumption is the responsibility of every livestock producer. Quality Assurance Programs are in place for meat and milk from beef and dairy cattle, goats, sheep, and swine. An important part of Quality Assurance Programs is the prudent use of drugs to avoid residues. Drug residues in meat and milk can potentially cause toxic or allergic reactions or cancer in people. When drug residues are found in meat and milk products, it hurts the entire industry by undermining consumer confidence and potentially having drugs removed from the market.

Many prudent-use guidelines focus on the use of antimicrobials (antibiotics). Misuse of antimicrobials in animals or humans can potentially contribute to multi-drug-resistant strains of bacteria that threaten the health of animals and people. But antimicrobials are not the only drugs that are important. All drugs – including pain medications, vaccines, medicated feeds and water, and others – should be used properly.

Types of Drugs

- Over-the counter (OTC)
  - Can be administered by a producer without the order of a veterinarian
  - Can only be used according to the label directions
- Prescription (Rx)
  - Cannot be administered by producers unless prescribed by a veterinarian
  - Label will contain the statement "Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian."

Livestock sometimes get diseases that require drug treatment for which there is no drug labeled. In this case, veterinarians can use drugs in an extralabel manner if they follow certain guidelines.

Examples of some situations in which drugs may need to be used in an extralabel manner are:

- A drug is needed at a higher dose than is on the label
- A drug needs to be administered for a longer period of time than is on the label
- A drug is needed for another food animal species than is on the label
- A drug needs to be administered by a route that is different than what is on the label

Veterinarian's Responsibility

Extralabel drug use can only be prescribed by a veterinarian. It is *illegal* for producers to decide to give drugs (including OTC drugs) in an extralabel manner on their own. And veterinarians not only have an ethical obligation to use drugs prudently, there are very stringent laws that they must follow to use drugs in an extralabel manner in food animals.

Extralabel drug-use constraints faced by food animal veterinarians include:

- There is a list of drugs in which extralabel use in food animals is prohibited, so these drugs cannot be used for any reason
- Extralabel use of feed medications is prohibited
- Human drugs can only be used in food animals under very limited conditions
- A careful examination of the animals and possibly diagnostic tests are needed for an accurate diagnosis
- A Veterinarian-Client-Patient-Relationship (VCPR) must exist
- The veterinarian must make sure the animal is properly identified, assign meat and milk withdrawal times, and trust the producer to abide by these times to ensure no illegal residues occur.

If producers call a veterinarian they have never met or have not contacted recently and ask for advice on medications over the phone, they may be disappointed when they don't receive much help. It should not be interpreted as lack of willingness on the veterinarian's part but the need to not jeopardize their veterinary license or face fines or jail time.

Producer's Responsibility

The first goal of a livestock producer should be to improve the overall health of the herd so drugs like antimicrobials are needed less. A solid herd health program including good nutrition, hygiene, vaccinations and biosecurity will decrease animal disease and the need for drug treatments. Prevention of diseases also is much more cost effective than treating them. Producers should get their veterinarian involved in this process, not only for their expertise but to establish that VCPR so that when an emergency arises, the veterinarian has fewer restrictions on his ability to prescribe drugs.

An example of a common treatment mistake made by producers is the treatment of foot rot with antimicrobials. Although foot rot is common in cattle, there are many other common causes of lameness in which antimicrobials are not indicated or will only work when used in combination with other procedures. Foot rot usually responds to one dose of most antimicrobials if treated early. But many cattle get treated with antimicrobials when they do not have foot rot, or the foot rot is chronic, and they get repeated injections when the first dose does not work. Practices like these jeopardize the future effectiveness and availability of antimicrobials; delay proper treatment, which lengthens treatment time and threatens the future productivity of an animal; cost the producer time and money; produce unwanted injection site lesions; and potentially cause illegal residues.

Livestock Producer Do's and Don'ts of Prudent Drug Use

- Have a solid herd health program to decrease the need for drugs
- Only use drugs, vaccines, feed medications, etc. according to the label
- Make sure animals have identification
- Keep records of which medications are used on which animals, administration date(s), dose, injection site(s) and outcomes of treatment
- Follow meat and milk withdrawal times
- Avoid inappropriate drug use
    - Using antimicrobials or other drugs when not indicated
    - Using the wrong drug

Beware of Compounded and Counterfeit Drugs

The use of compounded drugs in food animals is prohibited, and producers should be on the lookout for compounded and counterfeit drugs. If a drug is offered at a very discounted price, or from an unknown distributor, and especially if it is unsolicited, it should be suspected to be a compounded or counterfeit drug. Counterfeit products may have labels almost identical to legitimate labels and can be very difficult to spot. When in doubt, call your veterinarian or the drug manufacturing company.

Poultry (Dr. Theresia Lavergne)

Testing Wild Birds for Avian Influenza

The United States is monitoring and testing wild birds for avian influenza (bird flu). In 2006, between 75,000 and 100,000 samples will be collected and tested. Already, after several months of testing there is no detection of the H5N1 avian influenza strain that has spread through Asia, Europe, and Africa.

The majority of the samples analyzed have been taken in Alaska. Alaska is the "cross-roads" for flyways, and is where Asian and North American birds mix. Alaska is the most likely place for H5N1 to enter North America via migratory birds. In addition to Alaska, samples have been taken from waterfowl in 31 states.

Canada also is sampling and testing wild birds. The highly pathogenic H5N1 strain has not been detected in Canada either. (Source: Poultry Times, July 10, 2006)

It is not Easy to Spread Bird Flu

Researchers with the Centers for Disease Control and Prevention have not been able to develop a contagious form of H5N1 for people. The researchers are evaluating the potential of H5N1 to develop into a human pandemic. However, they have not been able to change the virus into a form that would transmit from human to human easily. Ferrets are being used in this research since their susceptibility to flu viruses is similar to that of humans. (Source: CDC Media Relations, July 31, 2006)

Dairy (Dr. Charlie Hutchison)

Milk Volume, Components and Prices

Seasonal factors are converging and beginning to tighten the supply of cream and cheese. In addition to seasonally low milk volumes and component levels, there is less milk available for manufacturing. Milk fat tests are at seasonal lows, reduced by severe heat across the country. However, until recently, component levels have been tracking higher than a year ago. In July, fat tests in all milk averaged 3.54%, up a point from July 2005, according to USDA's "Ag Prices" report. Year to date, fat tests have averaged 2.3 points higher than last year.

The heat wave that struck California along with other areas of the country has caused a reduction in both milk volume and components. Even though high temperatures and humidity are standard for the Southeastern United States this time of year, this year seems to be worse since milk production has dropped lower sooner than usual. Normally when August arrives, the Southeast region starts to pull more milk out of the surrounding states to offset local seasonal shortages. During the first week of August, handlers in Florida and the Southeast imported 268 loads (12.7 million lbs.), according to USDA's Dairy Market News, more than four times the average volume of imports for the first week in August. In past years, imports of this magnitude have not started until the last 2 weeks of the month. The effects of the numerous hurricanes to hit the region over the past two years may have contributed to the lower milk volume in this region too. Another reason cheese manufacturers have less milk available is because fluid processors are starting to build the pipeline for school milk. Daily fluid milk sales are typically 9% higher in September, October and November than in July.

Usually, when the volume of milk drops and supplies start to tighten the prices in the cheese market and futures market start to increase. However, the cheese market can not seem to get on track and gain some momentum. Prices for barrels continue to fluctuate between $1.15 and $1.19 per pound. This has bled over into the Class III futures market with not a single month left in 2006 and early 2007 up to $13.00 per cwt.

Heat-wave Losses Could Exceed $1 Billion

Dairy officials in California are estimating that losses in the dairy industry could exceed $1 billion in the wake of the recent heat wave in that state. That would include the deaths of thousands of cows, as well as reduced milk production, says Michael Marsh, chief executive officer of Western United Dairymen. "We anticipate the lost production to continue for the next nine to 14 months," he adds.

Whole Cottonseed: Potential for Short Supply

Due to the stress on the cotton crop in many parts of the South by continued hot, dry weather conditions; the Doane Cotton Condition Index has fallen to 200, the lowest level for this point in the season since 1998. Some believe that this year's cotton crop could be less than 20 million bales. This

could mean high whole cottonseed prices for dairy producers this year.

Wisconsin Cow Numbers Up

For the first time in 21 years the number of dairy cows in Wisconsin has increased. According to the National Ag Statistics Service, in June, the state had 1.243 million dairy cows, 8,000 more cows than June 2005.

New Tool to Help Reduce Stillbirths

Dairy producers will have a new reproductive management tool available to help reduce the increasing number of stillbirths in the dairy industry. The new genetic evaluation tool rates Holstein A.I. sires on their genetic ability to produce live calves and has been included in the Lifetime Net Merit index. For more information, on this management tool be sure to read "New tool to stem stillbirths" in the August issue of Dairy Herd Management.

Swine (Dr. Tim Page)

Pork and Omega Fatty Acids

Researchers from across the country have been trying to improve the marketability of eggs, red meat and now pork by producing animal products high in omega-3 fatty acids. The intention is to capture the increased consumer interest in the health promoting properties of food. A recent food store survey indicated that the fastest growing grocery brands were those that claim health benefits. Nutritionists say future emphasis should be on improving the fat quality in our diet which translates into less saturated fatty acids and more omega-3 fatty acids. One scientific nutrition committee has recommended that we double our consumption of the long chain omega-3 from 0.1 to 0.2 grams/day. Some foods with this content are permitted by law to make the claim that they benefit heart health.

Also, omega-3 polyunsaturated fatty acids are important in the development of healthy membranes and brain tissue as well as having important anti-inflammatory benefits. Good sources of very long (20 carbon chain and longer) omega-3 fatty acids are fish oil and oily fish. Rapeseed and linseed provide long chain (18 carbons) omega-3. Most polyunsaturates in the diet of man and livestock are omega-6, largely provided by oilseeds such as soy and sunflower. The ratio of omega-6 to omega-3 in a typical human diet is 5-7:1, but a better range is 3.5-4:1. Although fish may be the richest source of omega-3, some people do not consume fish. For them, omega-3 rich animal products are essential. In some cases the consumption of a single omega-3 rich egg would be enough to overcome the daily deficit. On average, animal products contribute 15% of the daily intake of the very long chain omega-3, but with enriched animal products this could double.

The omega-3 rich products already on the market usually are produced by feeding special diets to livestock and poultry. New research by the University of Missouri, Harvard and the University of Pittsburgh took a gene from an ocean roundworm (which naturally converts omega-6 into omega-3) and transferred it into a pig cell. They began by harvesting more than 1600 eggs from gilts and sows. They removed the genetic material form the eggs and replaced it with new DNA that had the roundworm gene inserted. The manipulated embryos were implanted into 14 sows. A total of ten male pigs were born. DNA analysis of the pigs showed that six had the roundworm gene. The cloned pigs produced one-fifth the amount of omega-3 fatty acids found in salmon. Successive generations could enhance the efficiency of the gene and produce higher amounts of omega-3.

The technology has great potential. However, getting the pigs to market is likely to be some time away. The United States does not allow genetically altered animals to enter the food chain despite scientific studies showing food from the animals is safe. For now, focus will remain on increasing the omega-3 content of pork by manipulating the diet. Under certain conditions, feeding animals with extracts of linseed, rapeseed, fishmeal, or fish oil can increase the level of omega-3 by 20-40 fold in eggs, 10 fold in chicken, 6 fold in pork and less than 2 fold in beef. Concerns about the effect of feeding dietary omega-3 products on pork quality seem to be unjustified at the levels likely to be fed in commercial practice. One pork study conducted added 60 grams of whole linseed per kilogram of feed. The pork was rated as having good eating quality, increased levels of omega-3 fatty acids and an improved ratio of polyunsaturated to saturated fatty acids in all tissues.

Horses (Dr. Clint Depew)

Fall Broodmare Care

Broodmares, this time of year, should be rebred and in good condition. Foals should be weaned and the mares should be gaining back weight lost during the lactation period. Pregnancy checking is recommended to ensure that the mare is still carrying a foal.

The mare’s condition score should be between 5 and 6 which means she should be at her normal weight to moderately fleshy (you should not be able to see her ribs). In general, during the first two trimesters of pregnancy she should be either on pasture or eating 10 to 15 pounds of hay per day. Normally grain is not necessary if the mare is in good condition. However, mares that are thin should be fed a couple of pounds of grain a day. Adjustments to the amount of feed given should be made every month based on condition score. Mares that are in good to fat condition achieve higher conception rates, are more likely to retain their pregnancies and produce stronger more viable foals.

Providing lots of clean fresh water is critical for all horses. Lactating mares can drink 20 to 25 gallons per day.

During the last trimester feed intake should be increased to 15 to 20 pounds of quality hay per day (or pasture) and 3 to 5 pounds of grain for a 1,100 lb. horse. The feed should have 12 to 14 % protein and balanced calcium to phosphorus ratio. Calcium should to be 1.1 to one times the level of phosphorus in the diet. In most commercial feeds the

actual levels will be about 0.5 to 0.45 calcium to phosphorus. The typical 1,100 pound mare should gain between 150 to 200 pounds during pregnancy which will provide enough fat for lactation after the mare foals.

Parasite control also is very important, and most of the common dewormers are safe for pregnant mares. However you should always read the label to ensure proper use.

The mare should be vaccinated approximately a month to six weeks prior to foaling to ensure high levels of antibodies in the colostrum for the foal. Mares in Louisiana should be vaccinated for tetanus, Eastern and Western encephalomyelitis, West Nile, and in areas of high exposure to other animals or outside horses, influenza and strangles.

Good management practices in the fall will ensure a quality foal next spring.

Equine Dentistry

Horsemen should have their horses checked once a year for dental problems. Horses that have teeth with sharp edges, protrusions, caps, etc. can have comprised health, performance, feed utilization and general well being.

In a study of 500 horses and foals, 80% had evidence of dental disease or oral problems. Typical problems identified included sharp enamel points, ulceration, abnormal wear, missing teeth or fractures and bite abnormalities. All of these problems cause a horse to have trouble eating and reduce the digestibility of the feed.

Typical signs of dental problems include dropping food, chewing with an open mouth, reluctance to eat, or difficulty chewing. Weight loss and digestive disturbances are further examples of dental problems.

Horsemen that choose to check their own horses should look for sharp edges on the outside of the upper teeth and sharp edges on the inside of the lower teeth. Normal chewing tends to cause these points to develop and they can cut the tongue or cheeks resulting in reluctance to chew.

Additionally, horses have teeth erupting up to the age of four and caps of the old teeth may be retained as new teeth emerge. This affects the horse's bite and disrupts normal chewing. So horsemen should check for caps. By moving the horse's upper and lower mandible from side to side you can determine if the upper and lower teeth match and if there are any catching points. Irregular growth patterns can cause a wave teeth pattern that reduces the horse's chewing ability.

Examine your horse's mouth for discoloration, ulceration and abscesses. Any of those problems will reduce feed consumption and utilization.

Additionally, a study reported that in 60% of the horses, athletic performance horses were more responsive to the trainer's aids after dental work.

Horsemen are recommended to routinely have their horses checked for developing dental problems to improve the horses feed utilization and responsiveness to the bit.

Beef (Dr. Jason Rowntree)

Effects of Drought

Cull slaughter and breeding cow prices are likely to come under more downward pressure in the coming weeks as drought forced sales continue. In the southern Plains it is not larger sales of cows that is increasing the pressure on cow prices, it is increased cow culling. Region 6 (Oklahoma, Texas, Arkansas, Louisiana and New Mexico) beef cow slaughter is up 44% for the year to date. The addition of more cows from other regions combined with continued heavy cow sales in the Southern Plains may push cull cow prices lower. Rapid deterioration of forage conditions in the central and northern plains and the southeast has added additional pressure to cull markets. On the positive side, the overall meat market situation is somewhat improved compared to the first half of the year, especially with respect to poultry supplies and that may firm up the hamburger market. Hopefully this will lessen the impact of additional supply pressure as a result of drought forced culling.

So far this year, beef cow slaughter in region 6 has been 422,100 head which is equivalent to 4.49% of January 1 beef cow inventories in these states. In 2005, beef cow slaughter at this point was 293,400 head (3.13% of January 1 inventories). This represents an increase of 1.37% in culling or an additional 128,700 head. This does not include any beef cows that have been relocated outside the region due to drought. Decreases in beef cow numbers in this region combined with additional culling in some other areas could result in a decrease in beef cow inventories come January. ~ Derrell Peel, Oklahoma State University

Replacement Heifer Value

As mentioned above, Louisiana has seen cow liquidation higher than expected. One potential profit center for beef cattle producers is the development of replacement heifers. Recently, Parcell et al. 2006, published an article outlining added value in heifer production. Heifers that had been artificially inseminated yielded premiums of $18.70/hd. Angus influenced heifers generated premiums near $60.00/hd. Females expected to calve outside of a thirty day window were discounted $24.30/hd. Heifers bred to bulls with superior carcass merit also yielded premiums. Females bred to bulls with above average marbling EPD's yielded $55.00/hd premiums, while females bred to bulls with marbling EPD's below 0 incurred as low as $90.00/hd discounts. Heifers sold in larger pens raised the average value of each individual heifer by $26.54. In other words, for a pen of four heifers, they are worth $26.54 more than if sold individually. In conclusion, heifers bred to calve within 30 days of each other along with being artificially inseminated to superior carcass bulls gained high premiums.