“Riding Point With Animal Science”

March, 2011

Volume 3, No. 2
On an annual basis, horse owners spend thousands of dollars trying to prevent or treat lameness in horses. Most owners are primarily concerned with preventing or treating osteoarthritis also known as degenerative joint disease. There are literally hundreds of products on the market available for owners to choose from that make various claims about joint health. So, which product is most cost effective, safe, and reliable for maintaining or preventing osteoarthritis in your horse? Well, first and foremost, have you ever stopped to think about what is a joint and why or how would it degenerate or decrease over time?

Before, we go any further let’s discuss the skeletal system of a horse. A horse has approximately 205 bones in its skeletal system. The function of the skeletal system is to provide support, assist in movement, protect internal organs, produce and store blood cells and minerals. There are five types of bones that can be found in the horse’s skeletal system, flat bones (bones that enclose and protect organs, example the ribs or scapula), sesamoid bones (bones that lie with in the tendons and ligaments, example: the navicular bone which works with the deep digital flexor tendon), irregular bones (example: vertebrae which houses the central nervous system), long bones (found in the limbs, support weight, store new blood cells, example: cannon bone or radius) and short bones (short and strong bones, which absorb concussion, example: tarsal bones in the hock or the coffin bone P-3).

Bones can be covered in a substance known as cartilage, which contains collagen and elastic fibers. Cartilage is typically found covering the end of a bone or at a joint a place where two bones meet. Although, we don’t physically want these two bones, bone on bone touching. So, within a joint such as a synovial joint (the meeting of two bones with a fluid in-between the two bones called synovia) there can be two distinct types of joints 1) a ball and socket or 2) a hinge. So, when the synovial fluid begins to disappear and or the cartilage decreases (known as osteoarthritis or degenerative joint disease) this is when an owner may see signs of pain, decreased performance, loss of mobility or even lameness.

Many equine owners what to be proactive and prevent this from occurring by supplying a supplement such as glucosamine sulfate, methylsulfonylmethan (MSM) or an antioxidant such as Vitamin C to their horse in the form of a nutraceutical or some may use a prescription drug. These various substances are believed to improve joint health and structure. They are commonly listed as ingredients in nutraceuticals fed to horses.

The issue with using nutraceuticals, a food derived product believed to be beneficial when fed to an animal, is the fact that very little research supports claims such as improved joint health when you feed X amount of ABC product to your horse. Some studies have been conducted in humans using these ingredients but few have been conducted in horses which raises the issue how much do you feed and for how long. Although, many owners, breeders and trainers will swear by certain supplements (nutraceuticals) that they work because they have seen or experienced improved performance in their horses. There is a chance that some of these products do work and professionals have seen an improvement in their horse’s performance. The thing to keep in mind is this is someone’s opinion or anecdotal evidence not a controlled study so proceed with caution and realistic expectations.

In regards to using products that have been proven through scientific studies consider looking at pharmaceutical products that require a prescription from your veterinarian. A pharmaceutical product is considered to be a substances approved by the Food and Drug Administration, that has been tested, developed, and patented by a pharmaceutical company. Some studies have supported improved joint health when administering certain injection(s) in the muscle, vein or directly into the joint. There are also products available through your veterinarian that can help alleviate pain and some times inflammation associated with osteoarthritis. These products are called Non Steroidal Anti-Inflammatory Drugs (NSAID’s such as aspirin, phenylbutazone, firocoxib, or flunixin meglumine). Keep in mind these drugs do not aid in slowing the process of degenerating
cartilage and if you are showing your equine there maybe certain rules and regulations in place about how much of this substance you can administer prior to competing.

Another thing to keep in mind when looking for a product to prevent or maintain joint health are products labeled as “natural.” Natural sounds appeasing and healthy but doesn’t always mean it’s the best option for your horse. The natural supplement may actually be in a form that is not available to your horse. Meaning when you feed the “natural” nutracuetical to your horse its digestive tract may not be able to digest the nutrient or break it down and absorb or utilize it. One suggestion when selecting a joint supplement for your horse read the labels, claims, studies, and compare the price point of the daily nutraceutical to prescription pharmaceutical products. Also, consult with your veterinarian for his or her recommendation on the best options for the health of your horse.

For more information on Lameness in Performance Horses check out this webcast by Dr. Ann Rashmir from Michigan State on detecting lameness and current treatments for lameness in performance horses. 
http://www.myhorseuniversity.com/resources/webcasts/lameness_in_the_performance_horse_mar_10
Help Your Cows to Raise Healthy Calves

John Andras

The Cattleman

A good vaccination program for a registered or commercial cow herd will help those -mothers provide immunity-boosting colostrum to their calves.

See full article at: http://www.thecattlemanmagazine.com/this-issue/small-steps.html

Protein Supplement Pays Off

Del Deterling

Contributing Editor

|Progressive Farmer

Troy Ellis has high expectations from his cow herd. Over the years, he has consistently weaned better than a 90% calf crop per cow bred, and steer calves have averaged 550 pounds at weaning.

See full article at: http://www.thecattlemanmagazine.com/this-issue/small-steps.html

Cattle prices climb on strong export demand

SANDY SHORE

Atlanta Journal and Constitution

Cattle futures rose Wednesday on expectations that export demand will grow stronger this year even as supplies of cattle in feedlots decline.

See full article at: http://www.ajc.com/business/cattle-prices-climb-on-866607.html

Proper Development Important for Bull Performance

Stephen B. Blezinger, Ph.D., PAS

Cattle Today

Every year about this time many producers are busy looking for replacement bulls to go into their cow herds. As most producers know, every bull, at some point in time has to be replaced due to age, injury, reproductive unsoundness or because that bull no longer fits the program.

See full article at: http://cattletoday.com/archive/2011/March/CT2439.php
The 48th Annual, Wyoming Rambouillet Association and University of Wyoming Animal Science Department Ram Performance Test concluded on February 21, 2011. This test was initiated more than 50 years ago to enable purebred ram breeders and commercial ram breeders to evaluate the genetic merit that their rams exhibited relative to other purebred/commercial ram breeders for the traits that are economically important to these breeders. The ram test started in Torrington, Wyoming in the fall of 1960 and was then moved to Laramie. The first year, there were 35 rams consigned to the test. In the 2010-2011 test there were 86 total rams including 70 registered rams. To identify superior sires, central ram tests were started so that purebred breeders could bring their rams to a central location, test them for a specified period of time and then evaluate their performance against all rams on the test. Traits of economic importance were identified and these traits were the ones that were measured during the testing period. Because sheep have many traits for which to select and it is difficult to select for 3 or 4 traits at the same time, to overcome this difficulty an index was developed. The index currently used tries to weight the most important traits more heavily to provide a greater amount of selection pressure to that particular trait. In the ram test, average daily gain was deemed the most important trait, along with clean fleece production, staple length and average fiber diameter. The index currently used by the Wyoming Test as well as the Texas and North Dakota Tests is:

Index = 60 (average daily gain in pounds) + 4.0 (365-day adjusted staple length in inches
up to 5.5 inches) + 4.0 (365-day adjusted clean wool in pounds) + fiber diameter and variability points according to the following schedule:

Fiber diameter (microns)

(22 - actual micron) X 3  (With a maximum of +9 pts)
(actual micron – 22) X 3  (With a maximum of -6 pts)

Variability

(22.0 - actual Coefficient of Variation) X 1.25
(With a maximum of ± 5 pts)

Rams that have been on a central ram test have actual data to back up their performance claims. When evaluating rams at the Douglas Ram Sale, how do you know what a particular ram’s average daily gain was, or how much clean fleece he is capable of producing? Can you predict how much economic gain you can achieve through your flock when you use rams that are not tested? With tested rams, you have the actual information you need to calculate the increase in productivity that this rams genetics will give to your flock.
### 1961-62 Test

<table>
<thead>
<tr>
<th>No Animals</th>
<th>ADG</th>
<th>CFW</th>
<th>SL</th>
<th>FD</th>
<th>Face Score</th>
<th>Wrinkle Score</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#/day</td>
<td>Lbs</td>
<td>Inches</td>
<td>microns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>0.47</td>
<td>9.82</td>
<td>3.5</td>
<td>25.11</td>
<td>2.75</td>
<td>1.74</td>
</tr>
<tr>
<td>Top 30%</td>
<td>0.5</td>
<td>11.3</td>
<td>3.9</td>
<td>24.9</td>
<td>2.2</td>
<td>1.5</td>
<td>77.40</td>
</tr>
<tr>
<td>Top Index Ram</td>
<td>0.5</td>
<td>14.1</td>
<td>4.2</td>
<td>27.9</td>
<td>1</td>
<td>2</td>
<td>94.50</td>
</tr>
</tbody>
</table>

### 2010-11 Test

<table>
<thead>
<tr>
<th></th>
<th>ADG</th>
<th>CFW</th>
<th>SL</th>
<th>FD</th>
<th>Face Score</th>
<th>Wrinkle Score</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#/day</td>
<td>Lbs</td>
<td>Inches</td>
<td>microns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>64</td>
<td>0.81</td>
<td>11.3</td>
<td>4.9</td>
<td>23.2</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Top 30%</td>
<td>0.9</td>
<td>12.3</td>
<td>5.2</td>
<td>22.3</td>
<td>1.5</td>
<td>1.6</td>
<td>123.46</td>
</tr>
<tr>
<td>Top Index Ram</td>
<td>1</td>
<td>13.2</td>
<td>5.2</td>
<td>21.6</td>
<td>2.1</td>
<td>1.3</td>
<td>130.80</td>
</tr>
</tbody>
</table>

Top Certifying Ram from the first ram test held in 1960-61.
Contact Bob Stobart 307-766-5212 for more information. Test results may be seen on the Animal Science Web Page: http://uwadmnweb.uwyo.edu/Wool-Lab/Ram_Tests.asp