The Efficacy of Equine Oral Joint Supplements

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†E. M. Wooten, D. Perritt, D. Grant - The Efficacy of Equine Oral Joint Supplements

Methods

• 14 horses (3 Quarter Horses, 1 Arabian) were housed in open pastures in groups of 4 with individual feeding pins.
• Horses were fed in individual pens and monitored to ensure no differences were associated with the use of the supplement.
• Pasture was divided into groups of 4 and exercised at different levels depending on the group.
• Physical data was collected on days 0 and 14 of each of the 3 trials to determine the correlation between price and the efficacy of the specific supplement.
• Supplemental ingredients of interest to this study are combinations of hyaluronic acid, chondroitin sulfate, and chondroitin sulfate.

Discussion

The authors would like to thank the SFASU Equine Center and its employees for their time and expertise, and Dr. Mark Lehrman and Dr. Megan Phillips at UT Southwestern for their time and equipment.

Acknowledgements

Table 1: Pasture and Exercise Groupings

<table>
<thead>
<tr>
<th>Pasture</th>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Light</td>
</tr>
<tr>
<td>Medium</td>
<td>Moderate</td>
</tr>
<tr>
<td>Heavy</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Table 2: Supplement Differences

<table>
<thead>
<tr>
<th>Supplement</th>
<th>Glucosamine</th>
<th>CS Guarantee</th>
<th>CS Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>130.75</td>
<td>123.50</td>
<td>84.95</td>
</tr>
<tr>
<td>B</td>
<td>75.00</td>
<td>68.75</td>
<td>57.50</td>
</tr>
<tr>
<td>C</td>
<td>75.00</td>
<td>68.75</td>
<td>57.50</td>
</tr>
</tbody>
</table>

Table 3: Label Guarantee vs. Analyzed Quantity

<table>
<thead>
<tr>
<th>Supplement</th>
<th>Glucosamine (mg/g)</th>
<th>CS Guarantee (mg/g)</th>
<th>CS Analysis (mg/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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Graph 1: Supplement Differences

Graph 2: Supplement A - Left Front

Graph 3: Supplement B - Left Front

Graph 4: Supplement C - Left Front

Graph 5: Supplement A Comparison

Graph 6: Supplement B Comparison

Graph 7: Supplement C Comparison

Introduction

Aims

• To determine if the commercially available supplements are meeting the label guarantees.
• To evaluate the efficacy of the supplements in reaching the target joint.
• The authors used to observe the amount of each molecule within the product that are influencing any visual changes in the animal.

Results

Supplement A presented a consistent increase from day 0 to day 14 in every horse without variation from environment or exercise regimen.

Discussion

The results are represented in Graph 1 to show the drastic difference between the 3 supplements. According to the graph, supplement A showed the most negative differences, there were a few negative differences in supplement B, and only positive differences were found using supplement C.

With the 3 supplements fed to the horses, another 3 supplements were added to the research in order to determine the amount of molecules in each product. Since nutrients are not regulated in North America, there is a difference on price and label guarantees from company to company. These 6 supplements were analyzed for hyaluronic acid and chondroitin sulfate content using ELISA kits and glucosamine using fluorophore-assisted carbohydrate electrophoresis.

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