The effect of Aureomycin and Sulmet combinations in feed on the performance of cattle

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Abstract
Two feedlot trials were conducted during the summer of 1967 at the Morris Feed Yards, Marris, Kansas, to study effects of aureomycin (chlortetracycline) and sulfamethazine fed alone or in combination on weight gain, feed efficiency and general health of newly arrived feeder calves.

Keywords
Cattlemen's Day, 1968; Report of progress (Kansas State University. Agricultural Experiment Station); 518; Beef; Aureomycin; Sulmet; Performance

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The Effect of Aureomycin and Sulmet Combinations in Feed
On the Performance of Cattle

P.A. Phar and P. R. Zimmer

Two feedlot trials were conducted during the summer of 1967 at the Morris Feed Yards, Morris, Kansas, to study effects of aureomycin (chlortetracycline) and sulfamethazine fed alone or in combination on weight gain, feed efficiency and general health of newly arrived feeder calves.

The calves originated in the Fort Worth, Texas, area and were trucked to the Morris Feed Yards, where they were individually identified and weighed before being fed and watered. Vaccinations with _Leptospira pomona_ bacterin and infectious bovine rhinotracheitis vaccine preceded random allotment to pens of five head each.

Shrunk body weights were recorded at the beginning and end of the 28-day experiments. Cattle were held off feed and water approximately 18 hours before recording final weights. The cattle were checked daily for health status. A licensed veterinarian also observed the cattle frequently and recorded his observations and treatments.

Feed consumption records were maintained throughout each trial.

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1 Field Investigator, American Cyanamid Company, Princeton, N.J.
Results and Discussion

Composition of the basal ration and protein supplement is shown in tables 33 and 34. Results of these trials are shown in tables 35, 36, 37. Incidence of sickness was low and no death losses occurred. The cattle receiving treatment D (350 mg. aureomycin and 350 mg. sulmet/head/day) had highest daily gains and lowest feed requirements in both trials. The control cattle, treatment A, had higher daily gains and lower feed requirements than treatments B (350 mg. sulmet/head/day) or C (350 mg. aureomycin/head/day) in one trial (3). Trials 1 and 2 show control cattle with highest feed requirements. In trial 2 controls made the lowest average daily gain. The sulmet cattle (treatment B) gained consistently more and consumed more feed than did cattle receiving 350 mg./head/day of aureomycin (treatment C).

Under the conditions of these trials the combination of 350 mg./head/day of aureomycin and 350 mg./head/day of sulmet resulted in faster, more economical gains and consequently a shorter interval in recovering weight loss due to shipment.
Table 33
Composition of Basal Ration

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehydrated alfalfa pellets</td>
<td>35</td>
</tr>
<tr>
<td>Cottonseed hulls</td>
<td>35</td>
</tr>
<tr>
<td>Sorghum grain</td>
<td>25</td>
</tr>
<tr>
<td>Molasses</td>
<td>(\frac{5}{100})</td>
</tr>
</tbody>
</table>

Table 34
Composition of Protein Supplement\(^1\)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean meal (44%)</td>
<td>65.0</td>
</tr>
<tr>
<td>Molasses (dried)</td>
<td>14.0</td>
</tr>
<tr>
<td>Dehydrated alfalfa meal</td>
<td>14.0</td>
</tr>
<tr>
<td>Dicalcium phosphate</td>
<td>5.2</td>
</tr>
<tr>
<td>Iodized salt</td>
<td>(\frac{1.8}{100.0})</td>
</tr>
</tbody>
</table>

Miconutrients/1000 lb.

- Cobalt carbonate: 2.0 gm.
- Zinc oxide: 625.0 gm.
- Vitamin A: 10,000,000.0 I.U.
- Vitamin D: 1,500,000.0 I.U.

1 Supplement was fed at the rate of two pounds per head daily.
Table 35

Summary of Trials

<table>
<thead>
<tr>
<th>Treatment groups</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aureomycin mg/head/day</td>
<td>0</td>
<td>0</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Sulmet mg/head/day</td>
<td>0</td>
<td>350</td>
<td>0</td>
<td>350</td>
</tr>
<tr>
<td>No. of steers</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>No. days on test</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Av. initial wt. (lb.)</td>
<td>371.5</td>
<td>368.3</td>
<td>370.7</td>
<td>366.5</td>
</tr>
<tr>
<td>Av. final wt. (lb.)</td>
<td>438.1</td>
<td>437.7</td>
<td>435.5</td>
<td>442.6</td>
</tr>
<tr>
<td>Av. total gain</td>
<td>66.6</td>
<td>69.4</td>
<td>64.8</td>
<td>76.1</td>
</tr>
<tr>
<td>Av. daily gain</td>
<td>2.38</td>
<td>2.48</td>
<td>2.31</td>
<td>2.72</td>
</tr>
<tr>
<td>Av. daily ration</td>
<td>15.64</td>
<td>16.10</td>
<td>14.65</td>
<td>15.34</td>
</tr>
<tr>
<td>Feed/lb. gain</td>
<td>6.57</td>
<td>6.49</td>
<td>6.34</td>
<td>5.64</td>
</tr>
<tr>
<td>Cattle req. treatment</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cattle req. retreat.</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total treatments</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Death loss</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatment groups</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Aureomycin mg/head/day</td>
<td>0</td>
<td>0</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Sulmet mg/head/day</td>
<td>0</td>
<td>350</td>
<td>0</td>
<td>350</td>
</tr>
<tr>
<td>No. of steers</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>No. days on test</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Av. initial wt. (lb.)</td>
<td>337.0</td>
<td>337.7</td>
<td>335.7</td>
<td>332.3</td>
</tr>
<tr>
<td>Av. final wt. (lb.)</td>
<td>401.0</td>
<td>408.0</td>
<td>403.0</td>
<td>409.3</td>
</tr>
<tr>
<td>Av. total gain</td>
<td>64.0</td>
<td>70.3</td>
<td>67.3</td>
<td>77.0</td>
</tr>
<tr>
<td>Av. daily gain</td>
<td>2.29</td>
<td>2.51</td>
<td>2.40</td>
<td>2.75</td>
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<tr>
<td>Av. daily ration</td>
<td>14.22</td>
<td>14.78</td>
<td>12.98</td>
<td>14.08</td>
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<tr>
<td>Feed/lb. gain</td>
<td>6.21</td>
<td>5.89</td>
<td>5.41</td>
<td>5.12</td>
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<tr>
<td>Cattle req. treatment</td>
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<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cattle req. retreat.</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total treatments</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Death loss</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatment groups</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Aureomycin mg/head/day</td>
<td>0</td>
<td>0</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Sulmet mg/head/day</td>
<td>0</td>
<td>350</td>
<td>0</td>
<td>350</td>
</tr>
<tr>
<td>No. of steers</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>No. days on test</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Av. initial wt. (lb.)</td>
<td>406.0</td>
<td>399.0</td>
<td>405.5</td>
<td>400.7</td>
</tr>
<tr>
<td>Av. final wt. (lb.)</td>
<td>475.3</td>
<td>467.5</td>
<td>468.0</td>
<td>476.0</td>
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<tr>
<td>Av. total gain</td>
<td>69.3</td>
<td>68.5</td>
<td>62.5</td>
<td>75.3</td>
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<tr>
<td>Av. daily gain</td>
<td>2.47</td>
<td>2.45</td>
<td>2.23</td>
<td>2.69</td>
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<tr>
<td>Av. daily ration</td>
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<td>17.39</td>
<td>16.21</td>
<td>16.57</td>
</tr>
<tr>
<td>Feed/lb. gain</td>
<td>6.92</td>
<td>7.10</td>
<td>7.27</td>
<td>6.16</td>
</tr>
<tr>
<td>Cattle req. treatment</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cattle req. retreat.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total treatments</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Death loss</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</table>