**Effect of lack of mineral supplementation on bone characteristics in beef calves**

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**AIM**
Effect of mineral supplementation (dicalcium phosphate) on performances and metacarpus characteristics of fattening bulls of two breeds with different growing rate and slaughtered at two different age

**MATERIALS AND METHODS**
- **animals**: 16 Limousine (Lim) and 16 Holstein (Hol) fattening bulls
- **feed rations**: to meet the needs of animals for an increase of 1 kg/d, with (HM) or without (LM) a supplement of CaHPO₄ (1.5 % on feed)
- **rearing period**: 106-268 d
- **slaughtering age**: 18 or 24 month
- **animal data**: initial and final live weights, carcass weight, average daily weight gain (ADG), carcass yield (CY)
- **metacarpus measurements**: weight (W), length (L), middle circumference (C), wall thickness (T)
- **statistics**: ANOVA, according to treatment

**ANIMAL PERFORMANCES**

<table>
<thead>
<tr>
<th></th>
<th>HM</th>
<th>LM</th>
<th>Lim</th>
<th>Hol</th>
<th>18</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADG (kg LW/d)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>CY (%)</td>
<td>56</td>
<td>55</td>
<td>59A</td>
<td>51B</td>
<td>54B</td>
<td>57A</td>
</tr>
</tbody>
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A, B: P<0.001

**RESULTS**

**Animals**
- ADG similar in all groups (only interactions diet-breed and breed-age)
- CY higher, as expected, in L than F and in older animals, showing also interactions (diet-breed and diet-age)

**Metacarpus**
- W heavier in older animals
- L longer in F than L as well as in older animals (with interaction breed-age)
- C longer in L than F and in older animals
- T thicker in older animals (with interaction breed-age)

**CONCLUSION**
No negative effects of diet on:
- health
- productive parameters
- bone measurements

**IMPLICATION**
- mineral supplementation costs
- environmental impact
- phosphorus is the most critical (excess in rations)

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