Does steer feed efficiency ranking matter?

**Bottom Line of Nutrition: Beef**

**Finishing phase performance as affected by growing phase feed efficiency ranking**

<table>
<thead>
<tr>
<th>LFE*</th>
<th>GFE</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final weight, lb.</td>
<td>1,359</td>
<td>1,363</td>
</tr>
<tr>
<td>ADG, lb./day</td>
<td>3.85</td>
<td>3.92</td>
</tr>
<tr>
<td>Gain/feed</td>
<td>25.96</td>
<td>24.86</td>
</tr>
</tbody>
</table>

*Least efficient during growing phase.
**Most efficient during growing phase.

However, there was a negative correlation for efficiency between phases for steers fed roughage-based growing diets and corn-based finishing diets ($r = -0.57, P = 0.01$).

**The Bottom Line**

These results suggest that cattle that are more efficient on high-fiber diets may have poorer performance on high-grain (starch) diets, illustrating that cattle should be performance tested for feed efficiency using diets similar to the production environment of interest.

**References**


**Rumen-protected choline for transition cows**

**From page 35**

ALTHOUGH further research is needed to elucidate this aspect of the choline mechanism, this could contribute to the reduction of metabolic disorders such as ketosis and fatty liver with choline supplementation.

In addition to inflammatory responses, there is also increased oxidative stress during the transition to the lactation period. Oxidation of fatty acids is critical for energy production in the liver; however, it also results in oxidative stress within the cells.

This is exacerbated when peroxisomal oxidation is increased in early lactation. Although this adaptation serves to increase the overall oxidative capacity, the first step of peroxisomal oxidation produces hydrogen peroxide and contributes to reactive oxygen species production (Grum et al., 1996; Drackley, 1999; Bradford, 2011).

Rumen-protected choline can reduce oxidative stress of the liver (Rahmani et al., 2014). This was further demonstrated in the cell culture model described previously in which increasing concentrations of choline tend to decrease reactive oxygen species released into the cell culture media (Chandler et al., 2015). This may suggest another aspect of the mechanism of choline action in the cow and could be one of the potential interventions to improving immune function in transition dairy cows.

**Conclusions**

Both whole animal and cell culture experiments have been used to further the understanding of choline’s role in liver health and function. The metabolic challenges associated with the transition to the lactation period in dairy cows lead to negative impacts on milk production, cow health, inflammation and oxidative stress.

**References**


