

Supplementing Corn to Cows

Quick Facts

The Situation: When corn supply is abundant and low-priced, many producers may be enticed to supplement more corn to cows than typical.

The Facts:

- Corn is not inherently bad for cattle, but understanding major issues to its use is necessary to maximize performance.
- Most cattle producers are probably familiar with the popularized concept of the rumen containing two populations of microorganisms—one being fiber digesting and the second being starch digesting—and the rhetoric that they cannot coexist at the same time and therefore feeding corn (starch) decreases fiber digestibility. While in practice this is often correct; however, the reason fiber digestibility decreases is due to lack of available nitrogen to the fiber-digesting microbes. This can be minimized if not eliminated by correcting the ruminal nitrogen level (see following references).
- The protein in corn is predominantly undegradable or bypass in nature, so attention to protein source when choosing a supplement is important.
- Since corn is a very high in starch, good management is essential to prevent acidosis from occurring.

Recommendations:

- Limit the amount of corn provided to brood cows to approximately 0.75% body weight (~6-10 lb per head daily).
- Remember to keep the total diet TDN:CP ratio below 7 (refer to the following links for presentation and webinar on this topic). A good rule-of-thumb to effectively utilize corn in a high-fiber diet, particularly lower quality fiber, is to blend enough rumen degradable protein with the corn to bring the corn protein mix up to a 20% CP blend. One can use the Pearson square to determine the correct amounts of corn and supplement (see following example).
- Since corn is high in bypass protein, utilizing a protein source that is highly degradable, i.e. Roughage Buster® or another biuret containing supplement, would have the greatest benefit because it is a source of slowly degradable nitrogen in the rumen which complements microbial growth in a predominantly forage diet with less risk of ammonia toxicity. Feedlot supplements would also work well in this scenario, particularly the Beef-trate® line.
- Corn should be fed whole. There is little benefit to further processing corn for cows, and feeding whole corn helps minimize acidosis issues. The only reason to deviate from this recommendation would be simply due to mixing or separation issues, depending on specific diet.
- Make sure adequate bunk space is available so boss cows do not eat more than their share. Allow at least 2 ft per head or more if possible.

References:

Link to Range Supplementation PPT:

https://service.admani.com/portal/page/portal/ADM_Alliance_Nutrition/Departments/Sales%20%20Marketing/Beef/Presentations-%20Educational/Supplementation%20tab%20and%20block%20webinar%20-%20Jeff%20and%20Chris%200613.pd

Link to Range Supplementation Webinar:

https://service.admani.com/portal/page/portal/ADM_Alliance_Nutrition/Departments/Sales%20%20Marketing/Beef/Presentations-%20Educational/range062313.vcr

Research articles supporting the balancing of ruminal N effects on mitigating negative associative effects of feeding grain to cattle on a high forage diet:

<http://journalofanimalscience.org/content/79/4/1041.full.pdf+html>

<http://www.journalofanimalscience.org/content/78/12/3144.full.pdf>

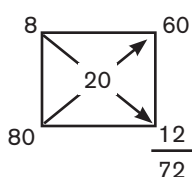
Pearson Square Example:

Ingredient 1 crude protein %
(i.e. corn 8%)

Desired crude protein of mix 20

Ingredient 2 crude protein %
(i.e. Roughage Buster 80%)

subtract diagonally



$$60 \div 72 = 83.3\% \text{ corn}$$

$$12 \div 72 = 16.7\% \text{ RB } 80$$

$$100.0\%$$