LOW COST COW/CALF PRODUCTION

The Bulletin ***For Alumni Of The School***

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The Land Payment

The land payment has been made. Now don't do anything foolish (such as not supplementing with degradable protein when needed or feeding grain) that could interfere with forage utilization. **I know you've heard enough already, especially the grain part**. The fact that grain supplementation will reduce forage consumption by cattle is widely accepted. *A few studies with sheep suggest that feeding a small quantity of grain actually will increase forage utilization and consumption.* Two reasons are given for reduced consumption of forage when grain is fed.

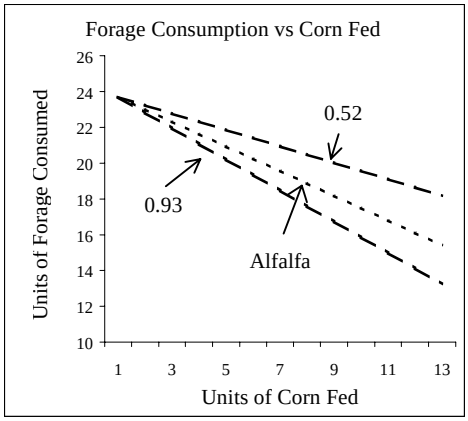
1. Reduced rumen pH. The optimal pH for cellulose fermentation in the rumen is 6.5. Cellulase, the enzyme involved in cellulose fermentation, will continue to function to a pH of 6.2. Below pH 6.2, cellulase is inactivated. A still lower pH level will kill off the microorganisms that produce the enzyme.
2. The carbohydrate or starch effect. While cellulase is responsible for cellulose utilization, it is amylase that is involved with starch fermentation. The presence of starch in the rumen can cause a shift in the microbial population. The shift is toward greater amylolytic and lower cellulolytic bacteria. The more aggressive amylolytic microorganisms get first shot at the required nutrients and the cellulolytic guys have to wait their turn.

It's Cold Outside

When the ambient temperature falls below the critical temperature (-15°C and 0°F) for a period of time, some energy supplementation is in order. High quality hay, an oilseed meal or a combination of the two, are preferable. Availability and cost, however, can render feeding hay and meal impractical. We constantly are being hammered by the fact that the most expensive part of the Cow/Calf business is hay farming. As more and more ranchers sell off the "green paint" and rely on stockpiled forage, a stack of high quality hay isn't always on hand for a tough winter. Furthermore, the purchase of high quality hay can cause friction with the banker.

So What Do I Do?

Researchers at the U. of Illinois conducted a study[1] that involved supplementing forage diets with cracked corn. The forage was fresh alfalfa, in the late bud stage, cut each day and fed ad libitum. The alfalfa contained about 0.685 Mcal of NEm. Corn was fed at 0.4, 0.8 and 1.2% of body weight. The substitution rate was about 0.69. For every unit of corn fed, alfalfa consumption was reduced by 0.69 units. That is a considerable drop. The authors compared their results with others. When corn was fed with ryegrass having an energy value of 0.93 Mcal, the substitution rate was 0.87. The substitution rate was only 0.43 when corn was fed with low-quality grass hay with 0.52 Mcal of NEm. These comparisons are shown below.

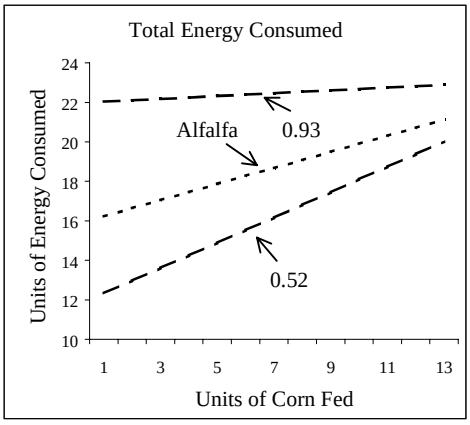


Is That The Answer?

Yes! Feed grain with low-quality forage because consumption is only slightly reduced. This matches with dormant stockpiled forage. In Canada and the northern tier of states, barley straw usually is in abundance at low cost. Barley straw has an energy content of 0.42 Mcal of NEm. Its consumption scarcely would be impaired. Keep in mind that barley straw must be supplemented with degradable protein in order to be fully utilized and to minimize the chance for impaction. If canola or soybean meals are used to meet this deficiency, you may have all of the energy the cattle need.

Energy Consumed

Although forage consumption is reduced when grain is fed, the total energy consumed is increased. This response is shown in the following table. Total energy



consumption was only slightly increased in the case of ryegrass and it would not be worth the cost. Some believe that the excess degradable protein contained in the ryegrass could be utilized to help ferment the corn. If it was saved from excretion, it wasn't worth it. Corn supplementation gave a real boost to total energy consumed with the low-quality grass hay. This is where grain supplements belong.

Rumors

"We left the calves on the cows through the winter for the first time. Largest calves we've ever weaned." Thank you, Don & Debbie Withrow, Oregon.

Schools In 1999 – Y2K

Locations in Canada to be announced.

January 24 – 27, '00
February 7 – 10, '00
February 22 – 25, '00

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Calgary, AB T1Y 5E4
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Dick Diven
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[1] Elizalde, J.C., N.R. Merchen and D.B. Faulkner. 1999. Supplemental cracked corn for steers fed fresh alfalfa: I. Effects on digestion of organic matter, fiber and starch. J. Anim. Sci. 77:457.