CHANGES IN DIETARY CRUDE PROTEIN IN COWS GRAZING THE CORONA RANGE AND LIVESTOCK RESEARCH CENTER

J. E. Sawyer, L. A. Knox, G. B. Donart, and M. K. Petersen

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Supplemental feeding of livestock is intended to supply nutrients that may be limiting in the diet. In New Mexico, protein is often supplemented to cattle when forage is dormant. Effective and efficient supplementation depends on provision of proper nutrients at a level that meets the needs of the animal. Since diet quality changes over time, a knowledge of the dynamics of these changes in quality may allow producers to supplement livestock more efficiently.

A study is being undertaken at NMSU's Corona Range and Livestock Research Center in order to describe the changes in diet quality over a year. Samples are collected using ruminally cannulated cows grazing Pinon-Juniper rangeland. Elevation is 6200 ft. Pasture consists of some open areas dominated by wolftail and blue grama, and moderate to dense stands of pinon and juniper. (See Brief by Knox et al. for more complete description.) Samples are obtained by completely evacuating the rumen of cannulated cows. Cows are then allowed to graze freely for approximately one hour. The grazed forage is then removed from the rumen as the diet sample, and original ruminal contents are replaced. Diet samples were taken monthly during the spring and summer, when forage quality changes most rapidly (April-August, 1996) and then after dormancy (late October, 1996) and late winter (January, 1997).

The dietary crude protein during these periods ranged from 7.5 in the spring (22 April 1996) to a high of 13.5 during mid-summer (30 July 1996) back to a low of 4.2 in late winter (19 Jan 1997). Figure 1 illustrates the changes in CP level in cow diets over these sampling periods, and also provides monthly rainfall data for the area.

It is generally accepted that a cow needs no additional protein if dietary CP is above ~7%. Furthermore, producers may choose to delay supplementation until a critical period arises such as calving or breeding, depending upon the condition of the animals going into winter. Knowledge of the dynamics of diet quality changes and periods when protein levels may be rapidly changing may allow producers to match supplemental feeds more effectively to animal needs.

In 1996, crude protein levels were adequate in cow diets from April through October.

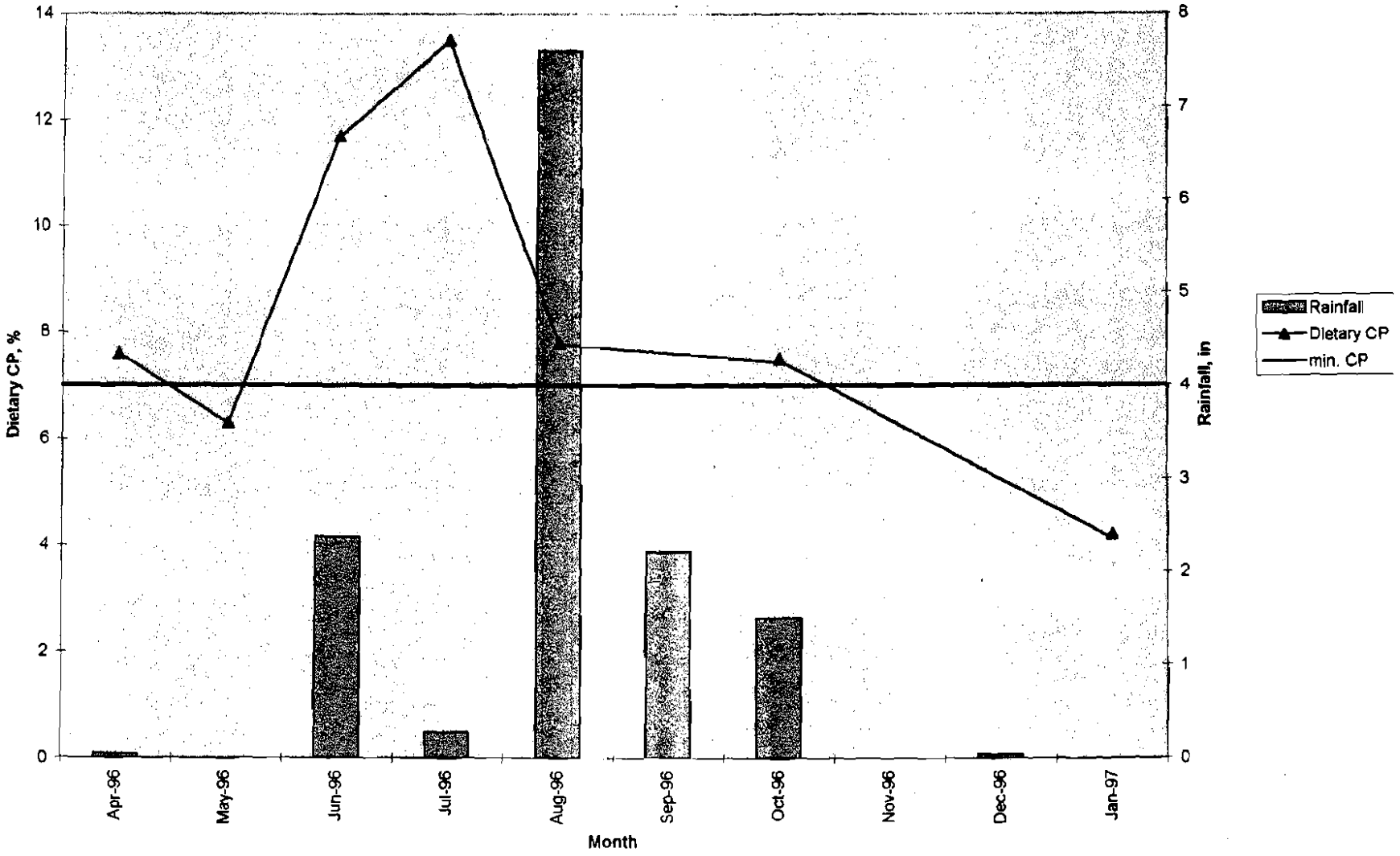

Figure 1. Rainfall and dietary CP in cow diets by month at the Corona Range and Livestock Research Center.