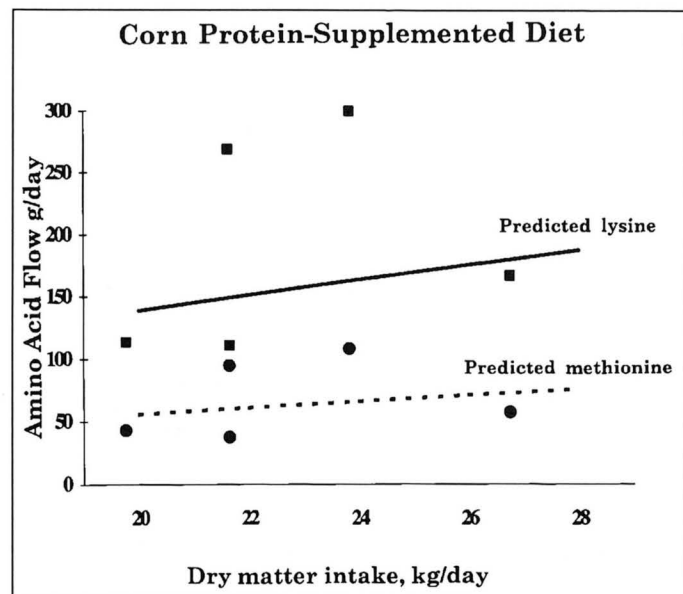


**Figure 2.** Duodenal flow of lysine (solid line) and methionine (dashed line) as predicted by CNCPS with increasing dry matter intake of corn gluten/corn distillers' grains-supplemented diet. Actual measurements of duodenal lysine (■) and methionine (●) flow from cannulated cows are superimposed.



diet. Figures 1 and 2 demonstrate the impact of dry matter intake on amino acid flow as predicted by the model for FM and CGD diets. Scattered over the model's regression lines are individual cow measurements from this study. In addition to differences in dry matter in-

take, variability among cows and within feedstuffs has a large impact on the ability to predict amino acid flow to the intestine.

Computer models of amino acid flows can help in the prediction of response to UIP and to amino acid supplements. This may be particularly true in high-producing herds or herds treated with bovine somatotropin. At the present time, reliability may be hindered by variability in feedstuffs and among cows, and by unanticipated effects on microbial protein production.

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# Postpartum Pathologic Changes Associated With a Palpable Uterine Lumen in Dairy Cattle

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## Abstract

Clinicians at the Veterinary Teaching Hospital at Colorado State University have determined that approximately 5% of all dairy cows have a palpable uterine lumen (PUL) at 28-42 days postpartum. The tubular structure of these uteri is collapsible and the inner walls of the uterine horns are distinguishable by palpation; however, fluid accumulation is not apparent. Delayed involution or subclinical endometritis is suspected. Fifteen Holstein cows with a PUL at first postpartum reproductive exam were matched for parity and stage of lactation with 15 cows with normal reproductive tracts during the same postpartum exam. Blood samples were collected from all cows and all uteri were cultured, flushed with lactated Ringer's solution, and biopsied. Complete blood counts

revealed that all cows were in normal health during the trial. Aerobic and/or facultative anaerobic bacteria were isolated from 14 of 15 cows with PUL and 13 of 15 cows with normal uteri. Nonhemolytic streptococci, coliforms and *A. pyogenes* were the most common isolates; however, the incidence of uterine infection did not differ ( $P>0.50$ ) between the two groups. Uterine flush samples from 6 cows (5 PUL, 1 normal) contained elevated mixed populations of degenerative and nondegenerative neutrophils, evidence of an inflammatory response. Uterine tissue specimens were scored according to a modified grading system based on a mare endometrial biopsy scoring system. Scores  $\geq 2A$  were assigned to 9 cows with a PUL and only 4 cows with normal uteri. These data indicate that diagnosis of PUL at postpartum examination is likely to identify cows with severe inflammatory changes.