

*Director's
Digest*



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ANIMAL PROTEIN EXPERIMENTS

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Below are brief abstracts of scientific papers presented at the combined Dairy and Animal Science Meeting in Lexington, KY in 1989

Purdue University fed naturally salmonella contaminated meat and bone meal to pigs to determine if the salmonella serotypes in the meat and bone meal were transferred to the digesta or fecal material during the study. The researchers concluded that there was no transfer of salmonella and no effect on pig health or growth. (FPRF Sponsored)

The University of Illinois studied digestibility of amino acids and protein for soybean meal, meat and bone meal, wheat bran, cottonseed meal and poultry by-product meal. All amino acids and crude protein digestibilities were similar in soybean meal 1 and 2, and also in meat and bone 1 and 2. True lysine digestibility (86%) in soybean meal was higher than all other sources except poultry by-product meal (78%).

The University of Nebraska fed escape proteins including blood meal to steers grazing corn stalks. No effect was observed from escape protein supplementation the first 3 weeks of the trial, but gain was significantly improved after the first three week period with escape protein.

Cornell University fed blood meal to Holstein heifers prior to calving and lactation. Body condition and milk protein yield were improved when blood meal was compared to soybean meal as a protein supplement.

Pennsylvania State University tested escape protein for calves from birth to 24 weeks of age. The addition of blood meal to self fed starter diets for dairy calves did not affect performance during the 24 week trial.

Brigham Young University replaced meat and bone meal with feather meal at 50 and 100 per cent for high producing dairy cows. Meat and bone meal has been determined to be a viable escape protein for dairy cows. This trial was to determine if feather meal could substitute for some or all of the escape protein. The results of this trial indicated that feather meal could be a viable escape protein source for lactating dairy cows. A second trial reported that feather meal treated with sodium hydroxide to reduce hydrolyzing time was a satisfactory alternative to feathers processed without sodium hydroxide.

The University of Nebraska conducted digestion and growth studies to compare blood meal and feathers processed together and separately as escape proteins for ruminants. Escape values were determined as follows: soybean meal 25.6%, blood meal 90.0%, feather meal 73.2%, blood meal and feather meal mixed and processed separately 81.8%. Metabolizable protein was approximately the same but feathers and blood processed together was significantly lower than when processed separately. (FPRF Sponsored)

The University of Minnesota compared hydrolyzed feather meal to urea as protein sources to growing Holstein steers. This study indicated that feather meal can be utilized effectively as a nitrogen source in high energy growing diets.

Utah State University tested dairy concentrates containing 10% meat and bone meal with and without feed flavors for consumption by dairy heifers. There were highly significant improvements in concentrate choice in favor of feed flavors but no difference between the flavors used.

Purdue University fed feather meal at 100% of the protein supplement or mixed with urea and soybean meal to feedlot finishing beef cattle. One half urea and one half feather meal diets performed equally to all soybean meal diets. 100 percent feather meal or 100 percent urea were not equal to

soybean meal. 1/2 feather meal and 1/2 soybean meal produced 10% more gain than all soybean meal or 1/2 feather meal and 1/2 urea. Carcass characteristics were not affected by treatment.

The University of Nebraska fed bypass protein to lactating beef cows over a two year period. Blood meal and corn gluten meal were fed at different levels in the diet. Bypass supplements improved milk production, calf weight and weaning weight.

The University of Minnesota fed feather meal and poultry by-product meal to growing-finishing steers. There were many comparisons and combinations, but in the total trial, feather meal and poultry by-product meal when contrasted with soybean meal and urea did not diminish daily gain, feed efficiency or carcass characteristics.