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J. D. Quigley, III, C. J. Kost and M. L. Miller. 2001. Intake, growth and efficiency of calves fed milk replacers containing whey protein concentrate or alternative animal proteins.

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Protein ingredients in calf milk replacers (CMR) contribute significantly to the overall cost of the product and alternatives to dried skim milk and whey protein concentrate (WPC) have been evaluated extensively. Spray-dried hydrolyzed red blood cells (SDHRBC) and bovine plasma (SDBP) have been compared to CMR containing WPC. However, the effects of SDHRBC and SDBP in the same formulation have not been determined. Our objective was to compare the performance of calves fed CMR based on WPC or SDHRBC alone or in combination with SDBP. Holstein bull calves (n = 120) were purchased from area dairies or sale barns and were assigned to receive CMR containing WPC, or 10% of the formula as SDHRBC or 10% SDHRBC plus 4% SDBP. All CMR were formulated to contain 23% and 21% of DM as crude protein and ether extract, respectively. Calves were housed in individual hutches and fed 454 g/d of CMR reconstituted to 12% DM for 24 d. Commercial calf starter and water were available throughout the study. Mean BW on d 0, 28 and 56 were unaffected by treatment and were 48.1, 58.5 and 89.5 kg, respectively. Mean intake of DM from CMR from d 0 to d 24 was 413 g/d; intake of calf starter and water were 1308 g/d and 3.6 L/d, respectively from d 0 to 56. Mean fecal scores, days scouring and days treated tended to be higher in calves fed SDBP, although much of the increase in veterinary treatments occurred during the last 2 wk of the study. Mean fecal scores were 1.65, 1.64 and 1.72 in calves fed WPC, SDHRBC and SDBP, respectively. Mean days with scours were 5.5, 5.3, and 8.3, respectively. There were few differences in physical characteristics of the CMR and acceptance by

the animals was excellent. Spray dried bovine plasma may be included in CMR formulations containing SDHRBC.

Written by Dr. Jim Quigley (16 February 2001)
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