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J. D. Quigley, C. A. Jaynes-Kost, and M. L. Miller. 2001. Effects of spray-dried whole egg in calf milk replacers on intake, growth and health of Holstein bull calves.

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Numerous feed ingredients have been evaluated as alternatives to milk proteins in calf milk replacer (CMR) formulations. We evaluated the use of spray-dried whole egg (SDWE), which is a significant source of protein (>50%) and fat (>35%) as an ingredient in CMR. Holstein bull calves (n = 120; mean age = 5.5 d) were purchased from area dairies and were assigned to receive CMR containing 0, 10, or 20% of the CMR formulation as SDWE, which replaced whey protein concentrate and animal fat. All CMR were formulated to contain 22% crude protein and 22% ether extract. Amount of CMR was increased from 454 g/d at d 1 to 726 g/d at d 28; thereafter amount of CMR was reduced to weaning at 42 d. All CMR were formulated to provide 0 or 1 mg/kg of supplemental biotin and contained oxytetracycline and neomycin. Commercial calf starter was available from d 29 to 56 and water was available throughout the study. Supplementation with biotin had no effect on any parameter measured. Increasing SDWE caused a linear decline in BW at 28 and 56 d, reduced BW gain, starter intake, total DM intake, water intake, and impaired feed efficiency. Mean BW gains from d 0 to 28 were 231, 70, and 0 g/d for calves fed 0, 10, and 20% SDWE, respectively. Body weights at 56 d were 73.1, 66.5 and 62.1 kg, respectively. Mean calf starter intakes during the 56-d study were 588, 482, and 452 g/d for calves fed 0, 10, and 20% SDWE, respectively. Mean feed efficiency ratios were 446, 318, and 231 g of BW gain/kg DM intake, respectively. Fecal scores increased with increasing SDWE and were greatest in calves fed 10% SDWE. Reduced growth and intake may have been due to reduced nutrient availability, although availability of biotin did not

affect intake or growth. Unless factor(s) reducing nutrient availability are identified, SDWE does not appear to be a useful ingredient in CMR formulations.

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