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C. M. Mowrey, R. E. James, J. D. Quigley, III, and M. L. McGilliard. 2001. Absorption of immunoglobulin G in calves fed colostrum or colostrum replacement and animal plasma in milk replacer.

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Newborn Holstein (n = 48) and Jersey (n = 30) calves were studied to compare the absorption of immunoglobulin G (IgG) from maternal colostrum (n = 39) or a colostrum replacement product derived from bovine serum (n = 39). Calves were also fed milk replacer with (n = 38) or without (n = 40) animal plasma to 29 d of age to determine the effect of plasma protein on IgG status, health and growth. Colostrum replacement was fed (Holsteins 1.89 L/feeding, Jerseys 1.42 L/feeding) at 1.0 and 13.0 h of age and provided a total of 250 (Holsteins) or 180 (Jerseys) g of IgG. Amount of pooled maternal colostrum fed (at 1.1 and 13.1 h) was adjusted to provide IgG equal to the replacement (Holsteins 249 g, Jerseys 186 g). Milk replacer (reconstituted to 12.5% DM) was fed at 10% of birth weight (2 feedings/d). Jugular blood was sampled at 0 h, 24 h, and weekly to determine plasma IgG. At blood collection calves were also weighed and measured to determine growth performance. Health scores, fecal scores, and grain intake were measured daily. Mean plasma IgG at 24 h did not differ between calves fed colostrum (13.78 ± 0.39 g/L) and replacement (13.96 ± 0.38 g/L). Plasma IgG and performance were not affected by addition of animal plasma to milk replacer. The colostrum substitute successfully replaced colostrum as the source of IgG for newborn calves. Animal plasma was an acceptable source of protein, but did not enhance growth or immunity.