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Effects of bovine colostrum on performance, survival, and immunoglobulin status of suckling piglets during the first days of life

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Supplementation of bovine colostrum (BC) has shown to improve growth performance, intestinal development, and immune response in early-weaned pigs. Little is known about whether BC may have similar effects in neonatal piglets. In the present study, the effect of BC supplementation on mortality, growth performance, and blood parameters (plasma proteins and white blood count) of suckling piglets in the first 10 days of life was investigated under practical conditions with special emphasis on low birth weight piglets. In total, 258 newborn piglets from 30 multiparous sows in a commercial breeding unit were randomly assigned to two different treatment groups. Piglets received either 1 ml of BC orally on days 1–3 of life (group BC, n = 128) or 1 ml of saline (0.9%) (control (CON) group; n = 130). Body weight was measured on days 1, 4, and 10 of life. Blood was collected on days 1 and 4 from 60 piglets per group. No differences in mortality, body weight, and average daily weight gain were observed between treatment groups in days 1–10. However, compared to CON, particularly in low birth weight piglets the administration of BC supported (P < 0.01) their survival. Group BC exhibited lower plasma total protein (P = 0.03) and beta-globulin (P = 0.02) concentrations compared to group CON. In conclusion, BC improved low and normal birth weight piglets' survival during their first 10 days of life. Further research is needed to clarify whether the survival rate is related to earlier gut closure indicated by lower plasma protein levels, which might be beneficial due to a lower uptake of potential antigenic substances.

Keywords:

bovine colostrum supplement; growth performance; field trial; nursery pig; survivability

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