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A survey of bovine colostrum quality and colostrum management practices on commercial dairy farms in Northern Ireland

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Colostrum is determined as high quality if it contains >50mg of IgG/ml. It has been widely established that colostrum is the primary source of nutrition and immunity to the newborn calf. The objective of this study was to establish common colostrum management practices and identify key factors affecting the quality of bovine colostrum. A survey of colostrum quality was conducted over 20 dairy farms in Northern Ireland during February 2013-2014. The mean number of dairy cows per farm was 214. Colostrum samples were collected (n=1290) and a questionnaire was completed to include detailed information for each animal. Colostrum samples were collected from Holstein (n=1033), Friesian (n=57), Ayrshire (n=81), Jersey crossbreed (n=21) and Swedish red crossbreed (n=39) and analyzed for IgG (Bovine IgG ELISA, Bio-X Diagnostics, Jemelle). The mean IgG concentration in colostrum was 55 mg/ml (SD=25.54); ranging from 1.4-204.2 mg/ml. Overall, 56% of samples analyzed were >50 mg/ml. Statistical analyses were performed using GenStat (16th edition) using linear mixed models and REML, farm fitted as a fixed effect. Significant differences were observed between breed, parity, calving season on IgG concentration (P<0.001). Dry cow nutrition did not appear to have an impact on colostrum quality across herds. According to industry recommendations, 44% of colostrum samples collected would provide inadequate immunity for the neonatal calf. Through detailing the extent and impact of colostrum quality variability on farms allows determination of best practice guidelines for colostrum management thus improved performance, health and survival of dairy calves.

Biography

Amanda Dunn is currently in the 2nd year of her PhD at the Agri-food and bioscience institute (AFBI), Hillsborough, Northern Ireland, where she is primarily supervised by Dr. Steven Morrison. The title of her PhD is 'Immuno-competence development in dairy calves'. She has completed a BSc honours degree in Agriculture Technology at Queens University, Belfast.

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