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Consumption of poultry meat is considered as one of the main sources of human campylobacteriosis, and there is clearly a need for new surveillance and control measures based on quantitative data on Campylobacter spp. colonization dynamics in broiler chickens. We conducted four experimental infection trials, using four isolators during each infection trial to evaluate colonization of individual broiler chickens by Campylobacter jejuni over time. Individual and pooled faecal samples were obtained at days 4, 7 and 12 post-inoculation (p.i.) and caecal samples at day 12 p.i. There were large differences between broiler chickens in the number of C. jejuni in caecal and faecal material. Faecal samples of C. jejuni ranged from 4·0 to 9·4 log c.f.u./g and from 4·8 to 9·3 log c.f.u./g in the caeca. Faecal c.f.u./g decreased with time p.i. Most variation in c.f.u. for faecal and caecal samples was attributed to broiler chickens and a minor part to isolators, whereas infection trials did not affect the total variance. The results showed that pooled samples within isolators had lower c.f.u./g compared to the arithmetic mean of the individual samples. There was a significant correlation between faecal c.f.u./g at days 4 and 7 p.i., days 7 and 12 p.i. and for caecal and faecal c.f.u./g at day 12 p.i.

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