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Risk factors for *Campylobacter* infection of broiler flocks

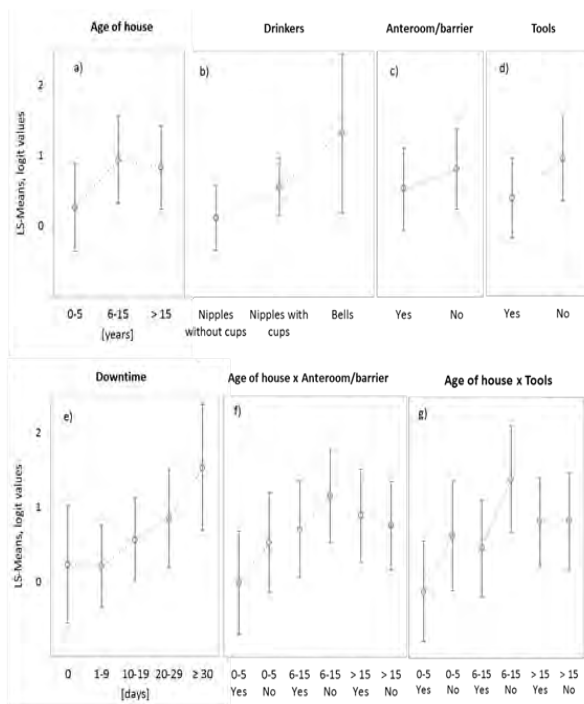
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Campylobacteriosis has become the leading bacterial zoonosis in humans in the European Union and other developed countries. There are many sources of human *Campylobacter* infections, but broilers and broiler meat have been shown to be the most important sources. The objective of the study was to identify on-farm risk factors for *Campylobacter* colonization of broiler flocks based on comparable data from six European countries.

The data included explanatory variables from a large questionnaire concerning production, farm management procedures and conditions, climate data on mean temperature, sunshine hours, precipitation, as well as data on *Campylobacter* status of broiler flocks. Overall, the study comprised data from more than 6000 flocks. The data were analyzed using a generalized linear model using backwards elimination and forward selection. Due to the structure of the data, several model approaches were explored, by applying different strategies for categorizing explanatory variables and for selection and elimination of variables in the model.



The risk of broiler flocks becoming colonized with *Campylobacter* was clearly affected by country. In descending order; broiler flocks were more likely to be colonized in Poland, UK, Spain, the Netherlands, Denmark and Norway due to country specific factors that could not be explained by the management, physical conditions or climate variables in the explored models. The seasonality in the prevalence of *Campylobacter* was described nicely by temperature, i.e. the number of positive flock increased with increasing temperatures. The age of broiler houses, presence of anterooms and barriers in all houses, designated tools for each house as well as length of downtime and the type of drinker systems were found to affect the risk of the broiler flocks becoming colonized by *Campylobacter*. In the figure some of the risk factors are shown.