51. The effect of weather on porcine disease conditions using data from the UK voluntary pig health schemes

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Previous studies of macroscopic conditions detected in slaughter pigs at abattoir through voluntary pig health schemes have shown that some lesions have strong seasonal effects. This led us to investigate if weather and other climatic conditions are associated with increases or decreases in the prevalence of the conditions. The data used in this study were generated by three UK voluntary pig health schemes: Wholesome Pigs Scotland (WPS) in Scotland, the BPEX Pig Health Scheme (BPHS) in England and Wales and the Pig Regen health and welfare checks (NIH&W), between 2005 and 2012. The conditions chosen to investigate the association with weather were: enzootic pneumonia-like lesions (EP-like), pericarditis (PC), milk spots (MS) and papular dermatitis (PD). Weather data on monthly number of hours of sunshine, total rainfall, minimum and maximum temperature were collected from the Met office for the same time period and countries. We used generalised linear models that adjusted for seasonal effects. Results indicate that there are statistically significant associations between temperature, number of hours of sunshine and rainfall and all the pig disease conditions analysed. As temperature increased, prevalence declined for most of the disease conditions. This is also true for hours of sunshine. The size of the effects, however differed by country and the disease considered (e.g. the increase by one degree celsius of maximum temperature is responsible for a 6% decrease in the average prevalence of EP-like lesions in the BPHS, while for NIH&W and WPS the temperature is only responsible for a 0.9% and 1.3% decrease, respectively). These results reinforce the influence of weather changes on the prevalence of diseases, especially for UK pig industry that has a high percentage of outdoor pig production.

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