

Abstract

The European Union Member States collect data on zoonoses, zoonotic agents, antimicrobial resistance and food-borne outbreaks. The European Food Safety Authority is assigned the tasks of analysing these data and preparing the annual zoonoses European Union Summary Report. A critical review of the statistical analysis of time trends was carried out and results were published in a Part I Report. The present Part II Report firstly provides examples of application of spatial analysis to investigate the geographic distribution of zoonotic agents. Specifically, data on *Salmonella* Infantis in breeding pig holdings from the 2008 European Union-wide baseline survey in breeding pigs were analysed at Member State level. Successively, case studies on spatial analysis of data provided by Austria (2008 baseline survey data on the prevalence of *Campylobacter*-colonized broiler slaughter batches) and by the Italian region of Veneto (2008 baseline survey data on the prevalence of *Campylobacter*-colonized broiler slaughter batches, and 2008 monitoring data on *Salmonella* infected laying hen holdings) were presented at district and municipality level, respectively. Diverse spatial statistics were performed to evaluate clustering of infection at different spatial scales. Results were discussed in the light of the data availability and of the geographical scale analysed. Secondly, the Part II Report presents the results of temporal trend analysis of *Salmonella* in laying hens from 2004 to 2006 using the statistical packages R and Stata. The same modelling approaches (design-based and generalised estimating equations) were applied as previously in the Part I Report using the SAS System. Additionally, analysis of temporal patterns was also carried out applying random effect models using the SAS System. Results obtained using different software and methodological approaches were in agreement. Suggestions for minimum sample sizes and number of time points needed for identifying trends of zoonotic agents in the European Union are also provided.

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