

07/2007

## Bovine Spongiforme Encephalopathy in Galicia



Galicia is one of the Spanish regions where the Bovine Spongiforme Encephalopathy (BSE) has more impact. The first case of a cow with BSE took place in 2000 in Galicia. Now, a group of researchers has analysed the geographic distribution of BSE cases and the infection risk in this Spanish autonomous community.

In Spain, the first Bovine Spongiform Encephalopathy (BSE) case was detected in 2000 in a cow born in the Galicia region (Northwestern Spain). From then and until October 2005, 590 cases were detected, 223 of them in Galicia.

In 1994, meat and bone meal (MBM) was banned on ruminant feed and, in 1996, an EU decision mandating an overall change in MBM processing was implemented. This decision was gradually applied in the territory and not enforced before July 1998. The objective of this study was to explore clustering of BSE cases and estimate the Standard Incidence Ratio (SIR) of BSE in Galicia. Our study was based on the BSE cases detected during the surveillance period 2000-2005 in the Galicia region.

These cases were divided, based on birth date, into two periods: animals born from 1994 to July 1998, and those born after July 1998 and located by place of birth. We tested the role of cross-contamination on the geographical SIR distribution for both periods. Hierarchical Bayesian models were used to model the overdispersion and lack of independence of the SIR estimates. The geographical distribution of the Standard Incidence Ratio of BSE between both periods was different. In the second period, the SIR was reduced in some areas.

The reduction in these areas could be attributable to the changes in the processing of MBM. We did not find any statistical link between the poultry population and the Standard Incidence Ratio, but pig population had a positive effect.

*Distribution by semesters of BSE cases of animals born in Galicia until October 2005 by birth cohort (total 223 cases). a) Ban on MBM for ruminant feed. b) Effective implementation of rendering system to inactivate the BSE agent (July 1998).*

*Representation of the location and size of the cluster of BSE cases in dairy (a) and beef (b) cattle between 1994 and July 1998 (circles) on a choropleth map of the dairy and beef cattle population (municipalities with higher populations are those with higher colour intensity). a) Dairy cattle: Observed: 43. Expected: 17 (p-value= 0.001). b) Beef cattle: Observed: 15. Expected: 3 (p-value= 0.002).*

**A. Allepuz<sup>1</sup>, A. López-Quílez<sup>2</sup>, A. Forte<sup>2</sup>, G. Fernández<sup>3</sup>, J. Casal<sup>1</sup>**

1 Centre de Recerca en Sanitat Animal (CRESA)/Departament de Sanitat i Anatomia Animals, Facultat de Veterinària, Universitat Autònoma de Barcelona.

2 Grup d'Estadística espacial i temporal en Epidemiologia i medi ambient (GEeit.E.ma)/Departament d'Estadística i Investigació Operativa, Universitat de València.

3 Departamento de Sanidad Animal, Facultad de Veterinaria, Universidad de Santiago de Compostela.

[alberto.allepuz@uab.es](mailto:alberto.allepuz@uab.es)

## References

"Spatial analysis of bovine spongiform encephalopathy in Galicia, Spain (2000-2005)". Allepuz, A; Lopez-Quílez, A; Forte, A; Fernandez, G; Casal, J. PREVENTIVE VETERINARY MEDICINE, 79 (2-4): 174-185 MAY 16 2007.

[View low-bandwidth version](#)