



N. 1-2 Febrero / February 2008

## Centro de Documentación / Documentation Center

### Objetivos/ Objectives

Identificar y atender las necesidades de información, adquisición, organización, almacenamiento, generación, uso y difusión de la información en salud pública veterinaria y proveer recursos bibliográficos técnicos-científicos al equipo de profesionales de la unidad y a los usuarios externos.

Identify and take care of the needs of information, acquisition, organization, storage, generation, use and diffusion of the information in veterinary public health and provide technical scientific bibliographical resources to the professional staff of the unit and to the users external.

### Temas de interés general / Subjects of general interest



**35 Reunión Ordinaria de la Comisión Sudamericana para la Lucha contra la Fiebre Aftosa**  
[http://www.panaftosa.org.br/Comp/Eventos/COSALFA\\_35/texto\\_cosalfa35.htm](http://www.panaftosa.org.br/Comp/Eventos/COSALFA_35/texto_cosalfa35.htm)

### Informaciones disponibles en formato electrónico / Information available in electronic format

#### **Encefalopatía Espongiforme Bovina (BSE) / Bovine Spongiform Encephalopathy (BSE)**



##### **Analyzing BSE surveillance in low prevalence countries**

Powell M, Scott A, Ebel E  
Prev Vet Med. 2008 Mar; 83 (3-4): 337-46

If the prevalence of bovine spongiform encephalopathy (BSE) varies among cohorts within a population, stratified analysis of BSE surveillance data may allow identification of differences in BSE exposure that are important with respect to the design and evaluation of disease prevention and control measures. In low BSE prevalence populations, however, surveillance at levels that meet or exceed international guidelines may provide insufficient statistical power to distinguish prevalence levels among cohorts. Furthermore, overstratification to account for hypothetical variability in the population may inflate uncertainty in BSE risk estimates.

**Text in English**

#### **Enfermedades Infecciosas Emergentes / Emerging Infectious Diseases**



## Global trends in emerging infectious diseases

Jones KE, Patel NG, Levy MA, Storeygard A, Balk D, Gittleman JL, Daszak P  
Nature 2008 Feb; 451 (7181): 990-3

Emerging infectious diseases (EIDs) are a significant burden on global economies and public health. Their emergence is thought to be driven largely by socio-economic, environmental and ecological factors, but no comparative study has explicitly analysed these linkages to understand global temporal and spatial patterns of EIDs. Here we analyse a database of 335 EID 'events' (origins of EIDs) between 1940 and 2004, and demonstrate non-random global patterns. EID events have risen significantly over time after controlling for reporting bias, with their peak incidence (in the 1980s) concomitant with the HIV pandemic. EID events are dominated by zoonoses (60.3% of EIDs): the majority of these (71.8%) originate in wildlife (for example, severe acute respiratory virus, Ebola virus), and are increasing significantly over time. We find that 54.3% of EID events are caused by bacteria or rickettsia, reflecting a large number of drug-resistant microbes in our database. Our results confirm that EID origins are significantly correlated with socio-economic, environmental and ecological factors, and provide a basis for identifying regions where new EIDs are most likely to originate (emerging disease 'hotspots'). They also reveal a substantial risk of wildlife zoonotic and vector-borne EIDs originating at lower latitudes where reporting effort is low. We conclude that global resources to counter disease emergence are poorly allocated, with the majority of the scientific and surveillance effort focused on countries from where the next important EID is least likely to originate.

**Text in English**

### Fiebre Aftosa /Foot-and-Mouth Disease



#### Evaluation of a novel proximity ligation assay for the sensitive and rapid detection of foot-and-mouth disease virus

Nordengrahn A, Gustafsdottir SM, Ebert K, Reid SM, King DP, Ferris NP, Brocchi E, Grazioli S, Lendegren U, Merza M  
Vet Microbiol. 2008 Mar; 127 (3-4): 227-36

A novel proximity ligation assay (PLA) using a pan-serotype reactive monoclonal antibody was developed and evaluated for the detection of foot-and-mouth disease virus (FMDV) in clinical samples collected from field cases of disease. The FMDV-specific PLA was found to be 100 times more sensitive for virus detection than the commonly used antigen capture-ELISA (AgELISA). As few as five TCID<sub>50</sub> were detected in individual assays, which was comparable with the analytical sensitivity of real-time RT-PCR. Although this assay was capable of detecting diverse isolates from all seven FMDV serotypes, the diagnostic sensitivity of the PLA assay was lower than real-time RT-PCR mainly due to a failure to detect some SAT 1, SAT 2 and SAT 3 FMDV strains. In conclusion, this new PLA format has high analytical sensitivity for the detection of FMDV in clinical samples and may prove valuable as a rapid and simple tool for use in FMD diagnosis.

**Text in English**



#### Foot-and-mouth disease virus infection in young lambs: Pathogenesis and tissue tropism

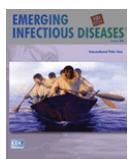
Ryan E, Horsington J, Durand S, Brooks H, Alexandersen S, Brownlie J, Zhang Z  
Vet Microbiol. 2008 Mar; 127 (3-4): 258-74

Foot-and-mouth disease (FMD) in adult sheep usually causes milder clinical signs than in cattle or pigs, and is often subtle enough to go undiagnosed. In contrast, FMD in lambs has been reported to cause high mortality during field outbreaks. In order to investigate the pathogenesis of FMD in lambs, two groups, aged 10–14 days, were infected with foot-and-mouth disease virus (FMDV) type O UKG. One group of lambs ( $n = 8$ ) was inoculated with FMDV in the coronary band, while the other ( $n = 4$ ) was infected by direct contact with FMDV-inoculated ewes. Daily serum samples and temperature measurements were taken. Lambs were killed sequentially and tissue samples taken for analysis. Using real-time RT-PCR, viral RNA levels in tissue samples and serum were measured, and a novel strand-specific real-time RT-PCR assay was used to quantify viral replication levels in tissues. Tissue sections were examined for histopathological lesions, and *in situ* hybridisation (ISH) was used to localise viral RNA within histological sections. The contact-infected lambs became infected approximately 24 h after the ewes were inoculated. Vesicular lesions developed on the feet of all lambs and on the caudo-lateral part of the tongues of six of the eight inoculated lambs and three of the four contact-infected lambs. Although no lambs developed severe clinical signs, one of the contact-infected lambs died acutely at 5

days post-exposure. Histological examination of the heart from this lamb showed multi-focal areas of lymphocytic-plasmacytic myocarditis; similar lesions were also observed in the hearts of three of the inoculated lambs. Using ISH, viral RNA was localised within cardiac and skeletal muscle cells from the lamb which had died, and also from vesicular lesions on the coronary band and tongue of inoculated lambs. These results provide a detailed description of the pathogenesis of the disease in lambs.

#### Text in English

#### Influenza Aviar /Avian Influenza



#### Influenza virus samples, international law, and global health diplomacy

Fidler DP

Emerg Infect Dis. 2008 Jan; 14 (1): 88-94

Indonesia's decision to withhold samples of avian influenza virus A (H5N1) from the World Health Organization for much of 2007 caused a crisis in global health. The World Health Assembly produced a resolution to try to address the crisis at its May 2007 meeting. I examine how the parties to this controversy used international law in framing and negotiating the dispute. Specifically, I analyze Indonesia's use of the international legal principle of sovereignty and its appeal to rules on the protection of biological and genetic resources found in the Convention on Biological Diversity. In addition, I consider how the International Health Regulations 2005 applied to the controversy. The incident involving Indonesia's actions with virus samples illustrates both the importance and the limitations of international law in global health diplomacy.

#### Text in English

<http://www.cdc.gov/eid/content/14/1/pdfs/88.pdf>

#### Inocuidad de los Alimentos /Food Safety



#### Food safety in the domestic environment: the effect of consumer risk information on human disease risks

Nauta MJ, Fischer AR, van Asselt ED, Jong AE, Frewer LJ, Jong R

Risk Anal. 2008 Feb; 28 (1): 179-92

The improvement of food safety in the domestic environment requires a transdisciplinary approach, involving interaction between both the social and natural sciences. This approach is applied in a study on risks associated with *Campylobacter* on broiler meat. First, some web-based information interventions were designed and tested on participant motivation and intentions to cook more safely. Based on these self-reported measures, the intervention supported by the emotion "disgust" was selected as the most promising information intervention. Its effect on microbial cross-contamination was tested by recruiting a set of participants who prepared a salad with chicken breast fillet carrying a known amount of tracer bacteria. The amount of tracer that could be recovered from the salad revealed the transfer and survival of *Campylobacter* and was used as a measure of hygiene. This was introduced into an existing risk model on *Campylobacter* in the Netherlands to assess the effect of the information intervention both at the level of exposure and the level of human disease risk. We showed that the information intervention supported by the emotion "disgust" alone had no measurable effect on the health risk. However, when a behavioral cue was embedded within the instruction for the salad preparation, the risk decreased sharply. It is shown that a transdisciplinary approach, involving research on risk perception, microbiology, and risk assessment, is successful in evaluating the efficacy of an information intervention in terms of human health risks. The approach offers a novel tool for science-based risk management in the area of food safety.

#### Text in English

<http://www.blackwell-synergy.com/action/showPdf?submitPDF=Full+Text+PDF+%28342+KB%29&doi=10.1111%2Fj.1539-6924.2008.01012.x>



#### Understanding and modelling bacterial transfer to foods: a review

Pérez-Rodríguez F, Valero A, Carrasco E, García RM, Zurera G

Trends Food Safety & Technology 2008; Mar; 19 (3): 131-41

Bacterial transfer events are considered to be an important cause of transmission of food-borne diseases. In this review the most common ways of bacterial transfer to food are studied, concluding that high levels of moisture, contact time and pressure could result in higher transfer between surfaces. From a risk management approach, this means that the identification and elimination of certain tasks or activities involving higher levels of these factors could be helpful to prevent bacterial transfer. Besides,

mathematical bacterial transfer models from literature are analysed, highlighting the use of transfer rates distributions to model bacterial transfer in a probabilistic Quantitative Microbiological Risk Assessment (QMRA) framework.

### Text in English

#### Rabia /Rabies



#### Rabies: old disease, new challenges

Haider S

CMAJ. 2008 Feb; 178 (5): 562-3

#### Text in English

<http://www.cmaj.ca/cgi/reprint/178/5/562>

#### Tuberculosis Bovina / Bovine Tuberculosis



#### Development of a molecular diagnostic test applied to experimental abattoir surveillance on bovine tuberculosis

Parra A, García N, García A, Lacombe A, Moreno F, Freira F, Moran J, Hermoso de Mendonza J

Vet Microbiol. 2008 Mar;127 (3-4): 315-24

One of the most essential systems applied to the eradication of bovine tuberculosis by *Mycobacterium bovis* is the epidemiologic surveillance of animals slaughtered in abattoir by means of inspection and sample taking of lesions compatible with tuberculosis, confirming the existence of the disease through culture and molecular detection, which takes weeks before a result can be obtained. An interesting alternative is to develop high-throughput molecular systems for the direct detection of *M. bovis* on biological samples. In this sense, our research has developed a molecular detection system by means of a real-time based PCR process which is applied directly to bovine biological samples and it allows to differentiate between *Mycobacterium tuberculosis* complex, *Mycobacterium avium* complex and other atypical mycobacteria that are interesting from the veterinary point of view. The sensitivity was analyzed by applying a conventional extraction system based on guanidine thiocyanate and a robotized system based on the selective magnetic capture of mycobacterial DNA. The molecular detection system showed a high specificity and a detection threshold of only two to three genomes. The sensitivity depended on the DNA extraction system being used and on the kind of lesions on which it was used; the sensitivity ranged from 61.11% for samples with non-visible lesions to 80.64% for chronic lesions, with an average sensitivity of 73.87% when using the manual extraction system and between 27.77 and 74.19% (average sensitivity 47.74%) when using the automated robotic system. In conclusion, our multiplex real-time PCR assay represents a fully controlled, high-throughput diagnostic tool for the rapid detection of *Mycobacterium* presence directly in animal clinical specimens, which could be a practical tool in the context of bovine tuberculosis abattoir surveillance programs and granuloma submission programs.

#### Text in English



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Pan American Foot and Mouth Disease Center

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