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Brucellosis of domestic swine and of wild boar with *Brucella suis* biovar 2 in France

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During these past years, an increase in the numbers of wild boars and an increase of brucellosis infection frequency in these populations was noticed in France. The hypothesis of the importance of this wild reservoir to explain the re-emergence of swine brucellosis with *Brucella suis* biovar 2 is proposed and has to be tested.

Tetracapsulosis caused by *Tetracapsula bryosalmonae* (Proliferative Kidney Disease PKD) of salmonid fish: a need for epidemiological investigations to overcome this fish health problem

P. de Kinkelin & Mélanie Gay

Tetracapsulosis caused by *Tetracapsula bryosalmonae* (T. b.) and widely designated Proliferative Kidney Disease, PKD, constitutes an infectious parasitic duality affecting both salmonid fish and invertebrates of the *phylum Bryozoa* which thus act as pathogen reservoirs for fish. Infection is discrete in *bryozoan* but conversely dramatic in fish which develops a strong hyperplastic response of lymphoid tissues to the presence of the developmental steps of T. b. Such a patho-immunological reaction first generates severe health disturbances possibly associated with casualties and economic losses and finally results in the destruction of parasite, making the recovering fish a parasitic dead-end. Given the absence of drug usable in practice and facing to a pathogen which is permanently released into aquatic environment, the only control strategy of the condition is to keep the fish infection beyond the threshold value required to generate overt infection. To meet this objective the three actors involved in PKD, namely *T. bryozoan*, and fish must be studied from the viewpoint of the factors governing the pathogen transmission and disease severity. Both descriptive and analytical epidemiological approaches look well-suited to understand the causes of the emergence of PKD. The control of detrimental effects of PKD on fish health and salmonid aquaculture, could thus be based upon risk assessment and implementation of vector control measures.

Equine French epidemiosurveillance network. First results for equine influenza

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An equine French network, supported by the Ministry of Agriculture through the French Agency for Food Safety (AFSSA-Alfort and Dozulé laboratories), the French Equine Veterinary Association (AVEF), diagnostic laboratories and the four national veterinary schools, takes place one year ago. Objectives of this network were to estimate incidence of major infectious diseases in various equine clientele, to inform quickly veterinarians on epizootic outbreak, to detect early exotic or new equine diseases and finally to draw up a bank of equine bacteria and virus isolated on French territory. Concerning the network management, it was decided to collect epidemiological information through two sub-networks: a general network and a specialised network. The specialised network collects more accurate information and propose free of charge laboratory's investigations. The thematic of this network since 1999 were the viral acute respiratory infections. In 1999 and 2000, forty-two outbreaks of equine influenza were detected through the network and six strains of influenza virus were isolated by the three referenced laboratories of the network.

Three years study of horse breeding in Normandy: zootechnical data and radiographic findings on foals

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During a three years study (1997-1999) in 28 horse breeding farms of Western France (Basse-Normandie), the growth of 435 foals from birth up to two years old has been followed. Four breeds were represented: French saddle, French Trotter, Thoroughbred and Arabian. Each foal has been measured 4.1 fold as a mean, leading to 1750 body weight measurements. The predictive equation of the body weight has been calculated taking into account, the zootechnical data, including the weight and height growth, represented by the measure of the body weight (BW, kg), the height at withers (HW, cm), the chest girth (CG, cm). and the age (reported in days). Equations are also proposed by breed and sex. This study is the first in France on a so large population, bred by breed, and should help in appreciating precisely the body weight of the young foals from birth up to two years old. This paper presented also the results of a study designed to establish the relationships between breeding and developmental orthopaedic lesions in horses born in Normandy. Joints of the thoracic and pelvic limbs were examined radiographically in 246 horses aged one to two years coming from 25 breeding farms. Radiographic findings were scored in four grades and an index of severity was attributed to each grade. The radiographic score for a horse was the summation of the indices of all sites. Analysis of variance showed no difference between the three departments nor between sexes or month of birth. There were differences between breeds; Arabian and Standardbred showed more lesions in the fetlocks and Thoroughbred in the stifles. Finally, horses included in this study had less osteoarticular disorders compared with similar studies and the following objective is to relate the radiographic findings with the nutrition of the mares and foals.

Monitoring of livestock: sampling for the detection of PCBs/dioxins in the Belgian cattle population

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In February 1999, a poisoning episode broke out in several industrial poultry farms in Belgium. The source of this contamination was found to be a stock of recycled fat that had been delivered by a firm to several compound feed producers, between 19 and 31 January 1999. A very good correlation was observed between dioxins (PCDFs and PCDDs) and PCBs. Consequently, a contamination mainly by PCBs was hypothesized. This finding made it possible to detect contaminated animals and animal products by dosage of the PCBs, more specifically by the 7 congeners with numbers 28, 52, 101, 118, 138, 153 and 180. The advantages of the dosage of PCBs compared to dioxins were its rapid test protocol and the fact that a larger number of laboratories could participate. In the cattle sector, 409 herds (0.81 p. cent) were submitted to the risk of feed contamination. The methodology used to detect a PCBs/dioxins contamination in the Belgian cattle population that was not submitted to the risk, is presented. This population is directly or indirectly destined for human consumption. It consisted in the systematic sampling of all calve fattening stations and all lots of exported bovines, and in the random sampling of slaughter cattle. This methodology is compared to the approach described in directive 96/23/CE.

Study of an increase of bovine abortion in 1998 in Côtes-d'Armor

Atika Benbernou, V. Otarod, G. Argenté & J.J. Bénet

A retrospective study covering the 1994-1998 period has been realised to verify if the increase of bovine abortion observed by the farmer's association of *Côtes-d'Armor* (FGDS) was due to a new pathogen. Data were collected from the FGDS and Laboratory files. Rate of abortion increased from 0.7 per cent to 0.9 for animals, and from 20 p. cent to 25 p. cent for herds, respectively in 1994 and 1998. Abortion was more frequently notified for milk cattle Normande (0.5 p. cent), Prim'Holstein (0.6 p. cent) and Montbéliarde (0.54 p. cent). This increase was greater for herds with more than 2 aborted cows a year, than for herds with 1 or 2 aborted cows a year. This increase was not linked to a particular pathogen, despite *Neospora caninum* had been first screened and detected in *Côtes-d'Armor* in 1998 in 20 p. cent of herds. Farmers who attended to an information meeting about bovine abortion had a higher risk to declare an abortion than farmers who did not attended such a meeting ($p < 0.05$; RR = 2). Increase in abortion notification resulting from this information campaign could easily explain the increase observed by FGDS. Modifications of the epidemiological surveillance system are proposed to facilitate such *a posteriori* analysis intended to explain any occurrence of new phenomena.

Identification of *Theileria annulata* in cattle using different molecular techniques: international comparison

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Seven laboratories decided to compare their molecular techniques (either PCR or RLB) to identify *Theileria annulata* within 120 cattle blood samples. For clinical samples all the laboratories detected the pathogen. Among the 24 samples originating from an area where *T. annulata* has not been identified, five samples were observed positives from at least one laboratory. For the other 72 samples, an unanimous result was observed for 50.7 p. cent samples. RLB gave higher positive rates than PCR and a lower discrepancy between laboratories performing it.

Database creation for veterinary epidemiology teaching

J. Casal, E. Mateu & M. Martin

The present report describes a software aimed to the creation of databases for the teaching of epidemiological analysis using Epi-Info. The programme generates two files containing the data of a hypothetical epidemiologic survey of a fictional disease of bovines. The first file gather data about farms and the second deals with individuals. The use of this programme for epidemiology teaching is described.

EPIDEMIOLOGY PAPER

Viruses of bats. Epidemiological news from France and the World

F. Moutou, J. Barrat & Virginie Bruyère

Since a few years, bats or *Chiroptera* have been involved in the field of human and animal health and epidemiology. This paper is a review of the most recent examples, Lyssavirus (rabies) being far from the only involved. Recent data from zoology, ecology, molecular biology and epidemiology will help to understand the importance of these species, which represent a quarter of all mammal species.

Pseudorabies in France in 1999

Suzanne Bastian, J.P. Buffereau, E. Le Drean, J.L. Bind, T. Müller & B. Toma

This paper presents the epidemiological situation for Aujeszky's disease in France in 1999, using tables and figures. The tracers used show that the situation stays favourable and is stable compared to the three previous years. Like in 1998, cases of Aujeszky's disease in dogs were linked to infection of wild boar, in regions where no case of porcine Aujeszky's disease with viral isolation was reported this year. The link between strains circulating in domestic swine in infected areas and those circulating in wild boars is discussed on the basis of molecular typing of a subset of strains.

Conceptual model of the economic impact of CBPP (Contagious bovine pleuropneumonia) at the herd level in a region of Ethiopia

G. Laval

This document presents a conceptual model of the impact of CBPP, a re-emerging cattle disease in Africa, on the livestock economy of an Ethiopian region, West Wollega. After a short description of the area and its farming systems, the micro-economic characteristics of the Ethiopian farm are detailed, as well as its relationship with other economic agents. Emphasis is placed on the high interdependence between the economies of the household and of the crop and livestock production systems found within the farm. The impact of CBPP on the herd is then presented in four stages: its biological effects, its impact on livestock output and on the farm's factors of production, initially considered at the individual animal level and then aggregated at the herd level, and lastly its effects on herd economics. The nature of the disease's impact is also influenced by internal and external factors, both linked to local husbandry practices and to farmers' socio-economic decision-making. The use of this conceptual model for undertaking economic analyses is discussed and an approach using survey data is proposed.