

2020-2021, issue 77 – ABSTRACTS

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French metropolitan population exposure to dog and cat bites

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Dog and cat bites can have traumatic and psychological consequences. They can also induce the transmission of zoonotic pathogens, including rabies virus. However, very few data are available about bite incidence among French citizens, especially about cat bites. In order to study French metropolitan population exposure to dog and cat bites, an anonymous online questionnaire was designed and disseminated on social media between October 2019 and April 2020. At the end of the distribution period, 2,336 questionnaires were analysed.

After a process of weighting of questionnaire responses (post-stratification) so that the sample reflects the structure of the French population, results showed that 3.1% (95% CI (confidence interval) (2.3 – 4.1)) of French citizens had been bitten at least once by a dog during the previous five years and 7.8% (95%CI (6.3 – 9.6)) by a cat. The annual incidence was 10.4 bites/1,000 people (95%CI (5.2 – 15.5)) for dog bites and 43.0 bites/1,000 people (95%CI (31.9 – 54.1)) for cat bites. These bites were mostly due to pets known by the bitten person (70.2% for dog bites and 91.1% for cat bites).

Only a minority of these bites led to a medical examination (15.7% for dog bites and 3.1% for cat bites) and/or a declaration to a veterinarian (23.5% for dog bites and 17.2% for cat bites), while the notification to the veterinary authorities is mandatory. It is worth noting that multivariate analyses and Odds Ratio values showed that the fact to own a dog or a cat or the fact to work in the veterinary field was strongly associated with bite occurrence ($p < 0.05$). These results confirm that dog and cat bites are, however, also a frequent outcome in the general population. Such data could encourage reflection on management and prevention measures of dog and cat bites, which remain a public health issue.

Seroprevalence of hepatitis E virus (HEV) assessment in cattle at Bobo-Dioulasso, Burkina Faso

Tialla Dieudonné, Sausy Aurélie, Cissé Assana *et al.*

This study's objective was to assess the seroprevalence of hepatitis E virus (HEV) in cattle at Bobo-Dioulasso, Burkina Faso. Thus, the individual serological status of 475 cattle was determined by an immunologic test. The individual seroprevalence was estimated at 5.1%. The "herd" prevalence of hepatitis E was estimated at 32.4%. Based on these findings, since the hepatitis E virus could be secreted in milk, consumption of raw milk could pose a risk to consumers. Therefore, adequate measures are needed, such as raising awareness about the benefits of pasteurization among farmers and consumers of raw milk in the town of Bobo-Dioulasso.

Classification of pastures according to the risk of contact between cattle from neighbouring farms

Garnier Jérémy, Rivière Julie, Belbis Guillaume, Zanella Gina

This study's objective was to allow an understanding of the characteristics of the contact network between cattle via pastures in France, which may contribute to pathogens' spread by direct or indirect means (nature and frequency of contacts, influence of rearing practices). To address this issue, 60 dairy and beef farms were investigated in two different departments

(French administrative areas). An original method was developed to rank at-risk pastures according to a risk score based on an evaluation of their risk severity level, allowing to rank the farms according to a risk score depending on the number of pastures at risk and their degree of severity. It was found that 14% of the pastures included in the sample were at-risk pastures.

Evaluation of the anthrax epidemiological surveillance in Burkina Faso

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This study aims at assessing the anthrax epidemiological surveillance in Burkina Faso. It was carried out using the OASIS (Tools for the Analysis of Health Information Systems) tool, which has been developed and standardized to assess zoonotic and animal diseases surveillance. The study targeted the Epidemiological Surveillance Network of Animal Diseases (RESUREP) in Burkina Faso, a body responsible for animal diseases surveillance, including anthrax. The later has been prioritized in our interdisciplinary surveillance study based on its epidemiological nature and in a bid to implement the “One Health” approach in the country. Burkina Faso has cases of anthrax in animals and in humans, with the most recorded between January and May. According to the Directorate for the Fight against Disease (2017), the number of anthrax cases in humans has increased from 167 in 2014 to 1583 in 2016. The study followed three main steps, *i.e.* a prior authorization from the General Directorate for Veterinary Services (DGVS), the identification of stakeholders at all levels of the epidemiological surveillance, and meetings for the practical implementation of the evaluation.

The OASIS tool uses a set of 78 evaluation criteria divided into ten sections, representing the functional parts of a surveillance system. Each criterion was given a score as defined in a scoring guide. Three graphs representing the results were generated, using a specific combination of the scores. Output 1 is an overview with a series of pie charts summarizing the scores of each section. This output assigns the lowest scores to the surveillance (4/12) and evaluation (4/9) modalities sections. Output 2 is a histogram representing the quality of the different key control points. It shows that sampling remains the most important aspect to be improved as it had the lowest score (4.3/20). Output 3 is a radar chart representing the level achieved by ten system attributes. This study helped to identify the key points and to make recommendations for improvement.

Clinical cases of bluetongue serotype 8 in calves in France during the 2018-2019 winter

Vinomack Chloé, Rivière Julie, Bréard Emmanuel *et al.*

Bluetongue virus serotype-8 (BTV-8) is a vector-borne viral disease transmitted by culicoides which caused a major epizootic in Europe in 2006-2009. Several studies have shown that transplacental transmission of BTV-8 can lead to abortions, congenital malformations or nervous clinical signs in new born calves. Several cases of calves with congenital malformations or displaying nervous clinical signs were reported in some departments in France between December 2018 and April 2019. RT-PCR analysis performed at the French National Reference Laboratory for Bluetongue confirmed 544 calves infected by the BTV-8. A study of the clinical signs displayed by these animals was performed for 244 among them. The main clinical signs were nervous clinical signs (81%), blindness (72%) and decrease or no more suckling reflex (40%). These results indicate that the re-emergent strain of BTV-8 can cross the transplacental barrier and cause congenital malformations as well as nervous clinical signs in calves.

Non-specific reactions to *ante-mortem* screening tests for bovine tuberculosis: investigations in a breeding cattle centre

Michelet Lorraine, Solanas Sébastien, Tambosco Jennifer *et al.*

Screening for bovine tuberculosis (bTB) is based on the detection of the cell-mediated immune response by simple (SCIT) or comparative (SCCIT) cervical intradermal tests for tuberculosis as well as the gamma interferon assay (IFN- γ). A main limitation of these methods is their lack of specificity, which can lead to false positive results. Several non-tuberculous mycobacteria are described as agents interfering with these methods. A high-throughput PCR chip (BioMark, Fluidigm) that simultaneously performs 4608 PCRs (24 genetic targets for 192 samples) and targets mycobacteria or actinomycetales species (18 different agents) known to interfere in the detection of tuberculosis, has been developed. Investigations were carried out in a breeding centre where several bulls showed non-negative reactions to SCCIT or IFN- γ during annual bTB screening. Samples of faeces and food were investigated. Candidates potentially responsible for non-negative reactions to *ante-mortem* tests have been detected. This study opens new perspectives on innovative methods for investigating environmental and food samples that may expose animals to agents interfering with bTB screening.

Challenges for surveillance of equine diseases in France

Lupo Coralie, Marcillaud-Pitel Christel, Pitel Pierre-Hugues *et al.*

The French equine industry is particularly heterogeneous and includes multiple stakeholders with different, even divergent, issues. These characteristics, added to the evolution of the European regulatory framework for the prevention and control of animal diseases, create several challenges for the surveillance of equine diseases in France. The French network for the surveillance of equine diseases (RESPE) has brought together veterinarians and socio-professionals to monitor the epidemiological situation and evolution of equine diseases since 1999. After 20 years of existence, the RESPE undergoes a new look and reaffirms its commitment to continuous improvement in the surveillance of equine diseases for a sustainable management of the health status of the French equine population.

EPIDEMIOLOGICAL PAPERS

Evolution and consequences of African swine fever epizootic in southeast Asia: from august 2018 to May 2020

Boucher François, Dufour Barbara & Delsart Maxime

South East Asia concentrates 60% of world pork production. Outbreaks of African swine fever began in China in August 2018. The virus has spread to neighbouring countries such as Mongolia in January 2019, Vietnam in February 2019, Cambodia in March 2019, North Korea and Hong Kong in May 2019, Laos in June 2019, the Philippines in July 2019, Myanmar in August 2019, South Korea, Timor-Leste and Indonesia in September 2019 then India in January 2020. The virus reached farms as well as wildlife. ASF is now causing a food security problem for some countries by making access to animal proteins difficult for their inhabitants. The aim of this study is to understand how the virus was able to spread so quickly to all countries in Southeast Asia and to analyse the impact of the disease on Chinese swine production.

Assessment of collaboration between the networks contributing to the salmonella surveillance system in France

Bordier Marion, Benhmidene Ghaya, Delavenne Camille et al.

Salmonella is a bacterial hazard of economic and health importance, transmitted mainly through the ingestion of contaminated food. Its prevention requires the implementation of an integrated surveillance system covering the entire food chain up to the consumer. Within the framework of the epidemiological surveillance platforms, an evaluation of the quality of collaboration between the 18 components contributing to the national system was conducted using ECoSur. This evaluation highlighted that a few collaborative modalities needed to be revised to enable better detection of epidemic signals and improve knowledge of the epidemiology of Salmonella. In addition, the operationalisation of the collaborative modalities implied the establishment of organisational structures to steer and coordinate this complex surveillance system. The national surveillance platforms for animal health and the food chain could serve as a framework for implementing these changes.

INFORMATION

SARS-CoV-2 within coronaviruses

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