

## 1998, issue 33 - Abstracts

### VIII<sup>th</sup> ISVEE

#### **Epidemiology and quality assurance: Application to food safety**

Blaha (T)

The conditions for the food industry are changing. Especially in industrialized countries, the safety and quality of food is becoming more and more an issue of the consumer's concern. The paper describes the impact of the farm-to-table concept and the implementation of HACCP plans throughout the food production chain on animal production and veterinary profession using the example of the pork production chain.

#### **From ecopathology to agroecosystem health**

Faye (B), Waltner-Toews (D) & McDermott (J)

The "epidemiologic revolution" of the 1960s arose in response to the inability of reductionist method to provide practical solutions to the complex problems of health and production in livestock systems. However, in a farm there are not only interactions between animal factors and herd husbandry factors such as feeding, housing, and microbiological environment, but also with a number of other 'non-animal' factors. For this reason, a 'global' or 'holistic' approach, aimed at explaining animal health status within the overall dynamic of a livestock production system, was developed in France under the title of "écopathologie". In écopathologie, the discipline of epidemiology is integrated into a systemic approach, including: the development of a preliminary conceptual model, sampling based on the structure of the livestock production system, the establishment of a field study by a multidisciplinary team, the organization and management of the animal health and production information, data analysis, the distribution of results to all participants and the development of a preventive medicine programme. However, the farm is also influenced by the social, economic and environmental setting to which it belongs. To account for this, a change of scale is necessary. The 3 elements of the livestock production system considered in écopathologie: farmer, herd and resources, become at the level of the agro ecosystem: a human community (farmers -livestock and crop- consumers, decision-makers), an animal population, and the complex of human, social and economic conditions within the system. The concept of agro ecosystem health is closely linked to the overall principle of improving the sustainability of the system. This and other measures of the health status of an agro ecosystem can be assessed with methods developed by epidemiologists and other disciplines within a system's perspective. In this systems view, écopathologie provides a basis for assessing herd health and agro ecosystem health develops the broader context into which ecopathology contributes.

#### **Epidemiology and quality assurance: Application at farm level**

Noordhuizen (JPTM) & Frankena (K)

Animal production is relevant with respect to farm income and the position of the sector on the market, but also with respect to the quality and safety of products of animal origin, related to public health. Animal production is part of a chain of food production. Therefore, producers have to take consumer expectations and demands in the domains of animal health, welfare and environment into account. Another attitude for production has to be adopted; this attitude can be visualised in Good Farming Practice, GFP, codes. Farmers focused on quality in its broadest sense need a system supporting them in their management and controlled quality risks. Generally speaking, there are 3 systems for that purpose: GFP, ISO and HACCP. When the hypothesis is followed that animal health is a feature of quality, as could be welfare and environment issues, then animal health were can be

executed following quality control principles. The HACCP concept is well suitable for quality management. The on-farm monitoring and surveillance system of critical control points in the animal production process is the most important tool in this procedure. Principles for HACCP application as well as certification fitness of HACCP are elaborated. They are illustrated by using salmonellosis in meat pig farm as objective for a HACCP approach. It is further discussed that in addition to animal health and quality, also animal welfare and environmental issues could be covered by a HACCP system in an integrated manner. Ultimately, the HACCP modules could end up in an overall ISO certification.

## **EPIDEMIOLOGY PAPER**

### **Deer-herd health and production profiling in New-Zealand**

Audigé (L), Wilson (PR) & Morris (RS)

A longitudinal observational study of 15 red deer farms was carried out in New Zealand for two years from March 1992. Its broad objectives were to provide reference data on health and production parameters and identify risk factors associated with major outcomes concerning reproduction, growth, velvet antler production, and health. Farm characteristics, including paddock data, were recorded. A substantial amount of data was collected daily by farmers and during three-monthly farm visits. Farm management practises, productivity parameters and health problems were recorded. Thirty sentinel deer were selected on each farm and sampled for blood and faeces. All hinds mated were body condition scored twice a year and pregnancy tested after mating. Data were analysed for descriptive and analytical epidemiology. Path analysis using multivariable regression techniques was the main analytical technique used for the analyses of risk factors. Examples from the wide range of data produced such as reproduction and health data are presented. Results were used to draw management plans likely to increase animal health and production and thus farm profitability, and to highlight areas for further research.

### **Use of an opinion survey for an extension program. Application to the udder diseases affecting suckling ewes**

Calavas (D), Sulpice (P), Bugnard (F) & Filippi (P)

An epidemiological study on the udder diseases affecting suckling ewes was carried out on 78 flocks in the South of France. During the study, an opinion survey was performed, in order to analyse the knowledge and the opinion of the farmers about the udder diseases. The ultimate goal of the opinion survey was to define appropriately the needs for an extension program on that topic. The paper presents the building up of the questionnaire and the statistical analysis. Generally speaking, the farmers think that the udder diseases are a rather important problem, with a bad prognosis, and that the current scientific knowledge is not sufficient. Three groups of farmers were defined from a typological analysis of the questionnaire: (i) those considering the problem as not very important, and mainly due to the individual characteristics of the ewes; (ii) those considering the problem as important and not sufficiently studied and known to fight against; (iii) those considering the problem as important and of a multifactorial causation. The discussion relates to the methodology of the opinion survey, to the interpretation of the typology and to the interest of this kind of study in defining an extension program. It also considers other possible uses for the opinion analysis method.

### **Comparison of CAEV ELISA results on blood and milk with or without preservative**

Benoit (C), Perrin (G) & Baudry (C)

Individual milks without and with preservative were found to be suitable for serological diagnosis of caprine arthritis encephalitis virus. As compared to individual sera, the relative specificity was over 98 p. cent, but the sensitivity decreases to 88.4 p. cent and 87.0 p. cent respectively. Nevertheless, such

disadvantage is corrected according to the advantages of use samples collected for other uses as animal recording.

#### **Aujeszky's disease in France during 1996 and 1997**

Toma (B), Buffereau (JP), Guillotin (J), Lacourt (A), Giraud (P), Poliak (S) & Caquineau (L)

This paper presents the epidemiological situation for Aujeszky's disease in France during 1996 and 1997, using tables and figures. The tracers used show that the situation is a little better than previously. For the first time, infection of wild boar has killed dogs.

#### **Evaluation of the Chad network of epidemiological surveillance: REPIMAT**

Dufour (B), Ouagal (M), Idriss (A), Maho (A), Saboun (M), Bidjeh (K), Hagggar (AI) & Delafosse (A)

Qualitative and quantitative technical evaluation of REPIMAT was realised through a method developed with French epidemiosurveillance networks, on behalf of French cooperation and cultural agency between 9 & 16 of November, 1997. The results is that this network, unique in Africa, is working (the evaluation note obtained at the end of evaluation is 52 out of 100). However different improvements are suggested. Those to be realised first are: - Precise definitions of aims of the network, especially priorities between diseases under surveillance; - Improvements of sampling and laboratory processing of biological materials; - Stronger implication of Farming and Animal Resources Direction (DERA) in the animation of REPIMAT through the participation of a DERA agent at the network animation committee, and regular meetings of the management committee, chaired by DERA. Besides this REPIMAT, with only slight improvements, can participate to rinderpest epidemiovigilance in Chad.