1996, issue 30 - Abstracts

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Statistical software on micro-computer: use in veterinary epidemiology
Gerbier (G) & Bugnard (F)
This paper presents thirteen of statistical software useful in veterinary epidemiology. These programs available in mid-1995 can be classified into 4 categories: standard software, layman software, specialized software and development software. These tools are directed toward specific needs and oriented toward different kind of users. In order to be able to compare the capabilities of these programs, their characteristics are analysed along the different steps of a data file analysis, from data input to results printing. Finally, the cost of these software are presented.

Efficacy study in swine: Critical analysis of 140 recent studies
Pommier (P), Wessel-Robert (S) & Bourgueil (E)
140 study reports of efficacy studies (field or laboratory studies, clinical or performance studies) presented at the 13th International Veterinary Pig Society Congress were systematically analysed. In 89 p. cent of the 96 clinical studies, animals were included in the study only if they met precise criteria or if disease was confirmed. In the 89 field studies, the majority (62 p. cent) were conducted on a single farm. In the 140 studies, 90 p. cent included one or more contemporary control groups. Randomisation is mentioned in 41 p. cent cases. The main deficiency concerns the use of statistics, which are used in only 56 p. cent of the studies and which are misused and/or misinterpreted in nearly one third of these studies. This deficiency is particularly marked in the clinical studies (53 p. cent without statistical analysis). 96 p. cent of the studies conclude that the tested product is better.

Prophylaxis benefit-cost analysis: principle, method and examples
Ducrot (C) & Boisseleau (D)
The benefit-cost approach is the most commonly used of prophylaxis economic analysis. The principle is to analyse in a methodical and exhaustive way the supplementary costs and the expected advantages of a new prophylaxis, compared to the present (or absence of) prophylaxis, in physical and monetary words. The comparison between the costs and the benefits is made by taking into account the rate of interest and different comparison indexes (benefits-costs difference, benefit/costs ratio, return internal index). The sensibility study is made to test how the results here obtained are sensible to the uncertainties linked to some of the hypothesis like the estimation of the new prophylaxis efficiency. The same method is applied, in a qualitative way, when the costs, the benefits and their consequences cannot be approached in a monetary way. Benefits-costs analysis had been applied since the end of the 1960's to most of infectious diseases. Three examples are presented, concerning African swine fever, Aujeszky's disease and foot-and-mouth disease. The foot-and-mouth disease example illustrates also the present development of mathematical models used for benefits-costs analysis.

The farmer, its environment, its practice and its herd health. Economical approach of health troubles in dairy cattle farming
Faye (B)
Eco-pathology represents a systemic approach of farming pathology. Formally linked to epidemiology, it focuses on the study of relationships between the different components of a farming system: the farmer whose decisions become practices, the resources, more or less linked to environment

(production conditions), the herd with its collective and individual characteristics. The main aim of eco-pathology risk factors, usually of a multifactorial aetiology, within the context of actual production systems. Logically, such an aim means recording, in non-experimental farming situations, a very impressive number of data during eco-pathological surveys. The tools of epidemiological research are then coming from computer science (building information systems like data bases), and from statistics (data processing with data analysis methods). The results lead to the explanation of pathology within farming systems running models and to the proposition of an eco-pathological model. The modelisation process represents one of the best way for future research programmes in eco-pathology. The system of reference represented by present data bases may also help to expand knowledge's bases (artificial intelligence, expert-systems). However, a feedback on the field is essential to validate the models as well as to compare new knowledge to reality. Thinking of veterinary practice, the eco-pathology move proceeds at the transformation of the animal doctor into a health engineer.

RISK ANALYSIS IN INTERNATIONAL TRADE. Meeting, 1996, May 30

International sanitary regulations

Geiger (F)

Since the Marrakech's agreements, signed in 1994, the sanitary regulations concerning the exchange of animals and animal products have changed. In fact, although up to now the importing country decided witch sanitary import conditions were suitable considering live animals and animal products, writers of Marrakech's agreement felt the need for control and protect sanitary barriers to trade, last mean for each country to hinder the free exchange market, backbone of the new world trade organization, through a specific agreement. Transparency, harmonization and risk analysis are the three main points of the sanitary and phyto-sanitary agreement of Marrakech, called SPS agreement. The standard international organizations, originally simple "clubs", are now the grants of sanitary and phyto-sanitary standards concerning animals and plants exchanges. In this new context, it is essential that the French capabilities be recognized and considered.

Proposed nomenclature for risk analysis in human and animal health

Cerf (O), Sanaa (M), Dufour (B) &Toma (B)

This paper presents the definition of the main expressions used in the field of risk analysis, and their connections with English expressions. The aim of such a nomenclature, useful in the case of trade of animals and animal products, as well as for foodstuffs, is to facilitate communication in a fast growing field.

Proposition for a methodology modification of animal disease risk analysis linked

Toma (B), Sanaa (M) & Dufour (B)

A working group led a reflexion on the risk analysis methodology described in the zoo-sanitary Code of the Office International Epizooties. It makes the proposition to proceed to an evolution of the methodology on four items: To adopt a standardized risk analysis method, instead of proposing, like now, that each country uses its own. To use systematically the result of the veterinary services quality evaluation of the exporting country and of its epidemiosurveillance system to balance the announced prevalence. Not to take apart the risk estimation from the definition of the acceptable risk. To take into account the non-visible infection and/or infestation.

Sanitary risk analysis for international trade: Synthesis of needs and existing in food microbiology
Salvat (G)
The use of the quantitative risk analysis, as recommended by the *Codex Alimentarius* as a future standard method to appreciate the sanitary status for foodstuffs international trade, turns to be, in some of its aspects, quite difficult. If the step of identifying hazards is not the worst, as most of this work had already been realized by professionals of food industry when applying the HACCP (Hazard Analysis Critical Control Points) method, the appreciation of the emission may be more difficult, without any reference methods to quantify some microorganism. However, the new development of reliable but dull methods for the counting of *Salmonella*, for instance, is promising. The appreciation of exposition is facilitated by the use of a growth and decline model for microorganisms. For example, the French ASK-ME model, for forecasting microbiology, gives first class results, that can be used in forecasting microbiology and in retroactive analysis. At the opposite, the appreciation of consequences (dose/response) is unknown and represents the main difficulty to draw an event-tree, the basis of risk estimation. Works are going on within an official working group for improve the situation. From some specific examples, it will be demonstrated that risk analysis can be used as a powerful decision tool by administration, especially for evaluation, risk management and communication, and also as a political tool leading to an unfounded constraint toward international trade.

Risk evaluation of contamination associated with the international trade of veterinary vaccines
Vannier (P)
The veterinary vaccinology is a highly specialized field in which data related to safety are not always easy to collect. The risk of contaminations is assessed, in a first pad, under the light of known data which were published, mainly in regard to contaminations. The problem is focused on the risk of introduction of exotic disease through the international trade of vaccines. From this risk assessment, the risk management is discussed considering the manufacturing conditions and the present regulations in Europe. The different strategies followed in several countries are discussed and compared. At the end, from the different data collected, the identified risk related to the international trade of veterinary vaccines is replaced in a global context of the risk of contamination in the international trade including the one of live animals.

Risk assessment on BSE-contamination of Swiss cattle feed concentrates
Vicari (A), Homlimann (B) & Audige (L)
Since the appearance of Bovine Spongiform Encephalopathy (BSE) in Switzerland in November 1990, the feeding of ruminants with animal derived proteins was banned in the following December. Nevertheless, because of the unavoidable slaughtering of sub-clinical BSE-affected cattle, incomplete inactivation of the disease agent during rendering and cross-contamination with meat-and-bone meal during feed manufacture, a sequence of events leading to a potential contamination of cattle concentrates by BSE-infected material was identified and modelled. It is estimated that maximally 0.6 p. cent of the meat-and-bone meal batches produced in 1995 in Switzerland had a residual BSE-infectivity. The average contamination per ton of cattle concentrates would rarely have exceeded a critical threshold. Emphasise is placed on the fact that the result depends on the quality of starting data. The Swiss Federal Veterinary Office considered suitable the implementation of new measures in May 1996 (e.g. the incineration of the head of all slaughtered cows).

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Risk analysis and the international trade in animals and their products

McDiarmid (SC)

Importation of animals or their products cannot be made without some element of risk. Risk analysis is a blend of art and science and is a tool intended to provide decision makers with an objective, repeatable and defensible assessment of the risks posed by a particular import proposal. Risk analysis comprises risk identification, risk assessment, risk management and risk communication. Examples are presented of risk analysis involving anthrax and green hides, List “A” diseases and embryos, rabies in dogs and fish diseases in salmon flesh.

Pseudorabies in wild boars in Tunisia

Jridi (M), Bouzghaia (H) & Toma (B)

In Tunisia, where pig farming is really small, a single pseudorabies outbreak had been identified up to now, in the dog, in 1937. The possibility of a wild virus reservoir has been proposed and confirmed through a serological survey in wild boar: 45 out of the 71 sera tested gave a positive result. However, the infection by this virus has not been identified in the two pig farms settled in the North of Tunisia and representing more than 80 p. cent of the national pig population. A wild circulation of pseudorabies virus does exist within wild boars of Northern Tunisia, probably without any link with domestic pig population.