Foreword

The European Association for Animal Production (EAAP) is an international non-governmental scientific organisation. Its aim, among others, is to stimulate and promote the advancement of research in the different areas of animal science in order to improve the technical as well as the economic, and social conditions of livestock production. The International Office for Epizootics (OIE, Office International des Epizooties) on the other hand, is a governmental organisation. A main task of OIE is the collection of information about animal health worldwide through the member countries. A second task is to raise standards backed by scientific evidence and which, once approved by the members, should be applied and whenever needed they can inform the decision makers in international trade regulation. In its different working groups, animal health-related technical aspects are thoroughly investigated especially those related to infections or to parasite infestations. Obviously both OIE and EAAP contribute to the improvement of animal health and this is a common goal. Like OIE, EAAP has study commissions. One of them, named “Management and Health Commission” was created in 1969. It was assigned to deal with disease and welfare issues.

During the EAAP annual meetings, the Management and Health commission often in connection with other commissions routinely organises sessions devoted to animal diseases whether they are of monocausal type, multifactorial or man-made diseases. As examples, in the recent years attention was paid to BSE (Bovine Spongiform Encephalopathy, Madrid 1992), to PRRS (Porcine Respiratory and Reproductive Syndrome, Aarhus 1993), to zoonoses: Tuberculosis (Edinburgh 1994), Brucellosis (Prague 1995). Salmonella infections were considered in Lillehammer (1996) whereas digestive disorders in the weaned Piglet were scheduled in Prague (1995). 1999, the year of the 75th anniversary of OIE and of the 50th anniversary for EAAP. This was an opportunity for these two experienced international organisations to cooperate.

A scientific session was decided and organised after discussion with Dr Blancou general director of OIE in Paris and his staff on a topic of common interest in Zurich (CH) at the 50th EAAP annual meeting. Despite the fact that research workers tend to concentrate on rather narrow fields of investigation, this does not mean that they should work in isolation. No one contests that bridges are needed over the scientific disciplines. In this respect collaboration with OIE is greatly appreciated.

Our session in Zurich was supported on the EAAP side by two commissions: the Cattle commission and the Management and Health Commissions. The considerable input of OIE in the programme made it possible to publish the papers presented in Zurich in this special issue of Livestock Production Science.

World globalization of exchanges of all kinds is certainly not a mere theoretical concept. It has become reality and one can see on a daily basis the expansion in world trade. Goods and products from the agriculture industry and particularly from livestock are no exception to this, with benefits to both producers in any given region of the world and consumers.

From the Animal Production point of view, and in order to adjust to the needs of the people, the producers have to have access to as a large variety of genetics as possible. Two conditions have to be met in order to give satisfaction to the animal farmers in...
that area: (1) a clear understanding of the breeding gains from the new genetics/reproductive technologies (2) effective methods to ensure that disease is not transmitted to the offspring.

It is with these facts in mind that we had the idea of organising at the 50th meeting of EAAP a special session dedicated to the relationships between modern means of exchanging germplasm (semen and embryos) and risk of disease transmission.

Theoretical concepts and practical experience have shown that particularly in ruminants, large and small including cervids, new technologies were enabling farmers to have access to any given «gene» available worldwide in a very safe way. However to reach that high level of safety, there are precise conditions to be met. The aim of this EAAP session was to present the state of the art of these technologies and give the constraints and rules to be fulfilled so as to offer safe germplasm for exchanges between farms both nationally and internationally.

The two first articles are devoted to cattle (Wentik et al.,) and pig (Leiding) artificial insemination. They refer to the enormous potential of these techniques to spread germplasm and stress the importance of a highly efficient system to prevent contamination of semen with major pathogens particularly Foot and Mouth Disease (FMD), Infectious Bovine-Rhinotracheitis/Infectious Pustular Vaginitis (IBR/IPV) or Hog Cholera, Aujeszky’s disease or Porcine Respiratory Reproductive Syndrome (PRRS). The following two articles refer to embryo transfer in cattle (Stringfellow and Givens) and in small ruminants (Thibier and Guérin). In cattle, embryo transfer has been widely used over the last two decades or so, particularly in international exchanges. This is due to its high potential of generating offspring directly from the genetic characteristics desired and to the very high level of safety in terms of health. In fact, this technology may also be a very efficient tool to salvage genetics in the context of disease eradication and this point is presented by the authors. In small ruminants, the embryo transfer industry is not quite so developed as that in the bovine species but there have been thousands of goat embryos and some sheep and cervids embryos that have been moved successfully worldwide. The authors have reviewed the state of the art of these technologies and have given an extended survey on the diseases of concern. One paper (Guérin et al.,) reports on a more recent technology which started to be implemented in the field by the early nineties, i.e. in vitro production of embryos. This has been essentially developed at this stage in cattle and this article reviews the relevant technical matters involved as well as the critical points to be kept under strict surveillance so as to offer safe embryos to the market. It is vitally important to stress that as in the case of in vivo derived embryos, there is a high responsibility of the so-called embryo collection (or transfer) team to ensure that all the necessary provisions to make those technologies safe, are effectively met. Adequate training and professionalism are the key points. Ultimately, Wrathall here publishes a very thorough review of the possible interaction between semen and embryos and the agent(s) involved in Transmissible Spongiform Encephalopathies. Of particular relevance is the review by the author of the potential sources of infectivity not only from the different body tissues but also from instruments and equipment, from materials of animal origin as well as from semen and the embryo per se.

These 6 articles put together here constitute a unique set of data and of information which we have no doubt, will constitute the standard reference for this topic.

The authors are grateful to Livestock Production Science for allowing such a publication which indeed comes at the right time. They also wish to thank the Director General of the OIE, Dr J Blancou, for agreeing to give its full support to the publication of to present session here published.

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