GASTROENTERITIS, NUTRITION AND ENVIRONMENT INTRODUCTION

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In this session, the authors will try to present the influence of the different parameters of the environment on the gastro-enteritis of the pig and calf.

More than a simple presentation of the principal results of the different experiments about that subject, the aim of this session is to show the importance of the environment on the digestive disorders, often disregarded because always difficult to appreciate.

A review, from some chosen examples, defines the general concept of the multifactorial diseases showing how the parameters of the environment: (housing conditions, microbism, animals, herd management, feeding, farmer) could act on the onset of the digestive disorders.

An application of this concept is then presented for the post-weaning diarrhoea of the piglet. Ten risk factors have been found, explaining the appearance of the weaning problems in a herd. These factors have been discovered by comparing, in an ecopathological study, 89 pig herds between them.

Then, always for the weaning diarrhoea of the piglet, a model of the interactions between a virus, a bacteria and the dietary regimen is presented. Different experiments showed that weaning diarrhoea could be the consequence of a process in three steps: first, an infection with rotavirus followed by an infection with enteropathogenic E. coli of which the multiplication is the result of mal-absorbed food in the gut.

Next, in the same way, the role of nutrition in the pathogenesis of the oedema disease of the piglet is studied. This study shows that a high protein level in a regimen favors the occurrence of weaning problems. A diminution of this protein level reduces the losses.

If the influence of the dietary regimen during the lactation on the enzymatic adaptation of the gut, when the young animal is weaned, is well known, the adaptation of the local immune system is less known. So, a study shows that some weaning diarrhoea could be the result of the absence of sensitization of the gut immune system to food proteins which are considered as antigens.

Finally, different trials demonstrate that, when housing conditions, climatic and hygienic environment, have a high standard it is not possible to prove any effect of weaning age on gastro-intestinal disorders. Even, from different investigations, it is hard to show any influence of housing conditions themselves, on gastro-intestinal disorders.

So, in this session, all the aspects of the environment are evoked. An ecopathological approach of the digestive disorders demonstrates the complexity of the problem.