III. — PATHOLOGY

General survey of health problems and performance in breeding-finishing pig herds in Brittany

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A study was made to analyse the results obtained after eight years of continuous epidemiological survey of health problems and technical performance in 29 breeding-finishing pig herds in Brittany. This study shows that eventhough performance have been improved during this period, there is an opposition between two types of behaviour. Above a certain threshold, performance are never depressed, whereas under this threshold, variations in the level of performance are not homogeneous. On the overall, health problems have become more numerous. Disorders occurring during the finishing period have remained steady, but those related to pregnancy or to farrowing have become more frequent. This increase in health problems is not sufficient to affect performance. This sample of herds seemed to be an excellent field of investigation for the development of concepts and of methods to be used in epidemiology.

Kinetics of lymphocyte subsets in blood and mammary gland of cyclic, pregnant and milking sows using monoclonal and polyclonal antibodies

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Using several monoclonal and polyclonal antibodies specific of porcine lymphocytes, we identified phenotypically on sections of mammary gland tissue the different T (helper, cytotoxic and suppressor) and B lymphocytes involved in the establishment of immune responses in the mammary parenchyma of sows at different stages : pregnancy (80 and 105 days of pregnancy), farrowing, lactation (16th day of lactation) and in cyclic sows. Blood was used as control. The following conclusions were drawn :

— all T and B lymphocytes as well as cells reacting with antigens were present at all the above mentioned stages ;

— at 105 days of pregnancy, the helper T lymphocytes/suppressor T lymphocytes ratio was reversed whereas at all the other stages suppressor T lymphocytes were predominant. This ratio remained steady in blood. This suggests a preferential migration of helper T lymphocytes to the udder between 80 and 105 days of pregnancy ;

— T lymphocyte subsets did not undergo morphological changes, during pregnancy and lactation, characteristic of lymphoid cell maturation. So, T lymphocytes could migrate from blood to the mammary tissue after maturation and multiplication ;

— as in the mouse and the rat, Ig A plasmocytes prevailed over Ig M and Ig G plasmocytes at all stages. The number of Ig A+ cells increased regularly from pregnancy to lactation, whereas that of Ig A+ in blood remained constant : Ig A plasmocytes could accumulate in the udder from day 80 of pregnancy. The morphological changes occurring between pregnancy and lactation suggest that these cells arrived in the form of plasmoblasts and multiplied there ;

— Ig M+ and Ig G+ cells accumulated mostly from the 1st day of lactation and did not undergo morphological changes. They could migrate in early lactation and only undergo a terminal differentiation in the mammary parenchyma.

In conclusion, there seems to be a local and autonomous immune system as shown on the one hand by the presence of all the lymphoid cells involved in an immune response and on the other hand by the independent quantitative variations of blood levels.

A new porcine coronavirus in french pig herds

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Since July 1986 a large number of pig herds (73 %) in Brittany have seroconverted to transmissible gastroenteritis (TGE) virus. This widespread seroconversion in the absence of clinical signs of enteric disease suggests the emergence of a new coronavirus exhibiting serological crossreactions with TGE virus. This new virus does not cause digestive, but rather respiratory disorders and might be in some herds associated with clinical signs observed in fattening pigs such as hyperthermia, anorexia and respiratory symptoms. A study was made in 6 herds exhibiting these symptoms. The currently used etiological methods (Aujeszky's disease, influenza) did not explain these disorders in 2 out of the 6 herds seroconverted to TGE virus. The aerial transmission of the virus probably explains the rapid spread. Similar widespread seroconversions to TGE virus have been reported in Denmark, Belgium and Great Britain. This infection is due to a TGE-like virus whose nature has not been established yet.

Etiology, epidemiology and pathogenesis of streptococcosis with *Streptococcus suis* type 2 (Lancefield's group R) in the pig

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A study on streptococcal disease due to *Streptococcus suis* type 2 was conducted in about thirty pig herds. Samples (nasal and vaginal swabs) were taken from live animals exhibiting nervous disorders and from healthy carriers at the slaughterhouse (tonsils).

According to this study, the main carrier site is the tonsil. Very young animals are already nasal and mainly tonsillar carriers. Transmission of the infection occurs when animals are mixed or following various stress or immunodepressions. The carrier state is important in young and breeding animals. The disease is little observed in farrowing and multiplier herds.

Pathogenesis is similar to that of pneumococcus in human medicine. It is characterized by an angina with rhinitis and pneumonia turning in some animals into meningitis and septicaemia.

Some breeds might be more sensitive.