



AGENCE FRANÇAISE
DE SÉCURITÉ SANITAIRE
DES ALIMENTS

FRENCH FOOD SAFETY AGENCY

- Research Laboratory on Poultry, Swine and Fish -

AFSSA, Sites of Ploufragan and Plouzané

Director : Gilles SALVAT

Deputy-directors : Swine sector : François MADEC

Poultry sector : Nicolas ETERRADOSSI

The Research Laboratory on Poultry, Swine and Fish (**LERAPP**) located in Brittany, includes Ploufragan which is part of the Zoopôle (Animal Science and Food Technology Platform) near Saint-Brieuc and Plouzané near Brest. It is a National State laboratory with 3 supervisory ministries Agriculture, Health and Budget.

The two experimental sites of Ploufragan were created in 1959 and in 1973, dedicated to Poultry and Swine, respectively. They were integrated into CNEVA (Centre National d'Études Vétérinaires et Alimentaires) in 1990 and became part of AFSSA (French Agency for Food Safety) in April 1999. Brest laboratory started in 1974 and integrated the LERAPP in 2006. The total staff reaches 210 people.



RESEARCH ACTIVITIES AND SCIENTIFIC SUPPORT

The laboratory carries out research and provides scientific and technical support as well as expert advice in the fields of :

- animal health,
- animal welfare,
- food safety.

Poultry, Rabbit, Swine and Fish are the target animal species studied. This research enables a systemic, integrated approach of the problems encountered in the related productions, by combining microbiology, parasitology, epidemiology, virology and biotechnologies such as molecular biology, vaccinology, zootechnics and system analyses.



The studies deal with the main aspects of veterinary research including veterinary public health. New, more appropriate methods for pathogen detection and host pathogen interactions are focused on in research projects. The pathogens are submitted to detailed characterization using the most modern equipment and advanced technologies. Our interest is also directed at immunity and vaccination. In vitro and in vivo experiments can take place in dedicated, specifically designed facilities of high bio-security standard (level 3).

Moreover, SPF (specific pathogen free) animals are raised in appropriate buildings in order to maintain their high sanitary status. Major infectious diseases of Poultry, Swine and Fish are investigated. In addition to animal health, animal welfare and food safety are the other topics of interest. Different issues related to food safety are addressed in several research projects and investigations are carried out at different stages of the poultry and pork production chains, including meat plants. The laboratory has chosen to work in close connection with the field, one of the links being made by epidemiologists who ensure the continuum from farm to fork. In this respect, the pre-harvest stage is a matter of major concern for our teams. The main research activities in the field of food safety are closely related to microbial ecology of host pathogens. Animal health surveillance is also another task of the laboratory through epidemiological surveillance networks.

Ploufragan is the national reference laboratory for Newcastle disease, avian influenza, campylobacter and salmonella in Poultry. It is also the national reference laboratory for classical swine fever and African swine fever and Aujeszky's disease in pigs. Additionally, it is the reference laboratory of the OIE (World organization for animal health) for Gumboro and Aujeszky's diseases.

Concerning Fish, it is the national reference laboratory for the viral haemorrhagic septicaemia (VHS), infectious haematopoietic necrosis (IHN) and infectious salmon anaemia (ISA).



➤ 9 RESEARCH UNITS :

Mycoplasmology-Bacteriology (MB)

The studies relate to avian and porcine bacterial infections, especially mycoplasmosis, respiratory bacteriosis in pig and antimicrobial resistance.

Head of Unit : Dr Marylène KOBISCH (m.kobisch@ploufragan.afssa.fr)

Avian and Rabbit Virology-Immunology-Parasitology (VIPAC)

The studies relate to avian and rabbit diseases : Newcastle disease, avian influenza (NRL*), Gumboro disease, etc...

Head of Unit : Dr Véronique JESTIN (v.jestin@ploufragan.afssa.fr)

Pig Virology and Immunology (VIP)

The studies relate to important viral porcine diseases such as classical Swine fever, African Swine fever, Aujeszky's diseases and major or emerging other diseases : Influenza, PRRS (NRL*).

Head of Unit : Dr Marie-Frédérique LE POTIER (mf.lepotier@ploufragan.afssa.fr)

Avian and Rabbit Welfare and Epidemiology (EBEAC)

This unit manages epidemiological surveillance networks, collecting and analysing information about avian rearing conditions and diseases. Operational epidemiology in the field of avian influenza was recently developed. Studies are also conducted on farm animal welfare in order to bring in national information regarding rearing systems used in poultry and rabbit productions.

Head of Unit : Dr Virginie MICHEL (v.michel@ploufragan.afssa.fr)

Epidemiology and Welfare of Pigs (EBEP)

This unit performs descriptive and analytic epidemiological studies in the areas of animal health and safety of pork products. Studies are also conducted on the methodologies of statistical analyses and modelling in the field of epidemiology.

Head of Unit : Dr François Madec (f.madec@ploufragan.afssa.fr)

Viral Genetics and Bio-security (GVB)

The research topics relate both to the genome of emerging viruses and to the viral and plasmidic vaccinal vectors. The models under study include porcine type II circovirus, pseudo-rabies' herpesvirus, avian adenovirus, with attention paid to bio-security.

Head of Unit : Dr André JESTIN (a.jestin@ploufragan.afssa.fr)

Hygiene and Quality of Avian and Pork Products (HQPAP)

Different kinds of issues connected to the microbiological safety of eggs, poultry and pork meat are dealt with, emphasising on Salmonella, Listeria and Campylobacter studies. The microbial ecology approach is of great concern.

Head of Unit : Dr Philippe FRAVALO (p.fravallo@ploufragan.afssa.fr)

Animal Feed Unit (AA)

This unit is targeted on the sanitary risks (animal health and public health) related to the feed manufactured for farm animals, with particular respect to the relationship between feed and gut microflora..

Head of Unit : Dr Christine BUREL (c.burel@ploufragan.afssa.fr)

Viral Diseases of Fish (PVP)

This unit carries out research on viral diseases and immunology of farmed fish both in fresh water (salmonids) and sea water (sea bass, sea bream and turbot), by studying the viral transmission and the resulting immune response in the fish hosts.

Head of Unit : Dr Jeannette CASTRIC (j.castric@brest.afssa.fr)

➤ 1 VACCINE MISSION : Dr Philippe VANNIER (p.vannier@ploufragan.afssa.fr)

Contributes to the instruction of marketing applications files for veterinary vaccines and coordinates locally this instruction in relationship with the National Veterinary Medicinal Agency (Afssa Fougères).

➤ 1 QUALITY MANAGEMENT SYSTEM SERVICE : Michel MORIN

(m.morin@ploufragan.afssa.fr)

Contributes to maintain laboratories at a high level of quality assurance as accredited by the COFRAC (French National Organisation for Quality assurance).

➤ 1 MISSION FOR TRAINING AND COMMUNICATION : Dr Elisabeth REPÉRANT

(e.reperant@ploufragan.afssa.fr)

Contributes to the training of the local staff and to communication involving Afssa.



There are 5000 m² of laboratories with 3000 m² of confined laboratories.

➤ **3 EXPERIMENTAL DEPARTMENTS :**

Breeding Department :

- table eggs: a conventional building (battery cages) with an 11000 laying hen capacity with one perchery/aviary section and another cage section (3000 m²),
- broiler chickens: a perchery type chick unit with a 5500 chick capacity (5000 m²),
- poultry breeding (hatchery, 42000 eggs),
- breeding table rabbits (1000 m²),
- facility for the manufacture of experimental feed for poultry, pigs and rabbits.

Experimental confined facilities for Poultry :

- The facilities are of level 3 bio-security (BL3)
- breeding and experimental section consisting of an animal house for parasitology, isolators and protected rooms (2080 m²) for infection and vaccine challenges,
 - protected facilities producing Specific Pathogen Free (SPF) breeding hens, turkeys and ducks.

Experimental confined facilities for Pigs (BL3) :

- protected experimental rooms for challenges,
- protected pig house accommodating a small herd of SPF pigs for experimental purposes and isolators.

Experimental Fish Department :

Experimental facilities include different sized tanks and thermo-regulated water allowing to work in thermal field conditions.

- rainbow trout spawners : 200 genitors (virus-free animals)
- experimental rooms : 300 m²

These departments constitute an important component of the laboratory for the production of SPF animals, but also used for experimental infections in a confined and safe environment (air filtration).



COLLABORATION AND PARTNERSHIPS

The research carried out is part of a cooperative network on a national and international level. In France, a number of links exist with other AFSSA laboratories, veterinary and agricultural colleges, the National School for Public Health, INRA, Pasteur Institute, etc. At the international level, there are numerous common research projects : EU research programmes, COST programmes, and other connections with many countries throughout the world. Some AFSSA scientists are also experts for international organisations : the European Commission, the EFSA, European Pharmacopoeia, EMEA, OIE, FAO, WHO, ISAH, EAAP, ESVV....

The laboratory is located in France's leading area for poultry, pig and fish productions, facilitating the direct contact of scientists with the technical reality of agriculture and food chains (including feed mills, farms, fish-farms, abattoirs and food processing plants). This practical knowledge helps the laboratory to define its experimental approach and to identify the most relevant research needs, using appropriate facilities and the most advanced technologies.

Ploufragan laboratory is part of a technopole dedicated to animal production called "Zoopôle" (<http://www.zoopole.com>) and Brest is part of the "Technopôle Brest-Iroise" (<http://www.tech-brest-iroise.fr/>)

Laboratoire d'Etudes et de Recherches Avicoles, Porcines et Piscicoles
Zoopôle, B.P. 53, 22440 PLOUFRAGAN, Tél. 02 96 01 62 22 – Fax 02 96 01 62 23
B.P. 70, 29280 PLOUZANE, Tél. 02 98 22 44 62 – Fax 02 98 22 44 85
Web : www.ploufragan.afssa.fr - www.afssa.fr