

Thematic area

Farming Systems



Section II

Topic 2.2 - Preventing and controlling emergence of animal and plant pests and diseases



Budget

832,988,00 €



Duration

36 months



Project

26/LAGMED

Improvement of preventive actions to emerging LAGoviruses in the MEDiterranean basin: development and optimisation of methodologies for pathogen detection and control

Context

The traditional epidemiologic triad model holds that infectious diseases result from the interaction between pathogen, host and environment. In the last 30 years, European rabbit populations have been decimated by the rabbit haemorrhagic disease (RHD). RHD is caused by the RHD virus (RHDV), a Lagovirus of the family Calciviridae, which causes a fulminant hepatitis that leads to death within 48-72h. In rabbitries, the initial impact of RHD slowly abated over time as a consequence of efficient vaccination campaigns and other control measures. However, in 2010, a new genotype named RHDV2 or RHDVb, and more recently GI.2, emerged in France with an unknown origin, but linked to the Euro-Mediterranean region. GI.2 possibly represents a new serotype and was detected both in wild and farm rabbits. Moreover, it has an ability to kill rabbits <11 days old, rabbits vaccinated against RHDV GI.1 (former GI-G6) or naturally immunised, and hares. This new genotype has been reported in Europe, Australia, America and Africa, and showed the relevant impact of this disease, particularly on the fragile equilibrium of the Mediterranean ecosystem. Indeed, RHD is still one of the most (if not the most) devastating diseases of rabbits.

Objectives

The main objective of this project is to increase interdisciplinary scientific and technical knowledge on RHD and its aetiological agent. Particularly, we will monitor RHD epidemiology in the Mediterranean region and perform a genomic characterisation of circulating strains to develop more accurate, rapid and sensitive diagnostic tools. Considering the dynamics of the different GI.2 strains, we expect to test and determine the most adequate biosecurity measures to contain the disease and prevent future outbreaks both in the field and in rabbit-production systems.

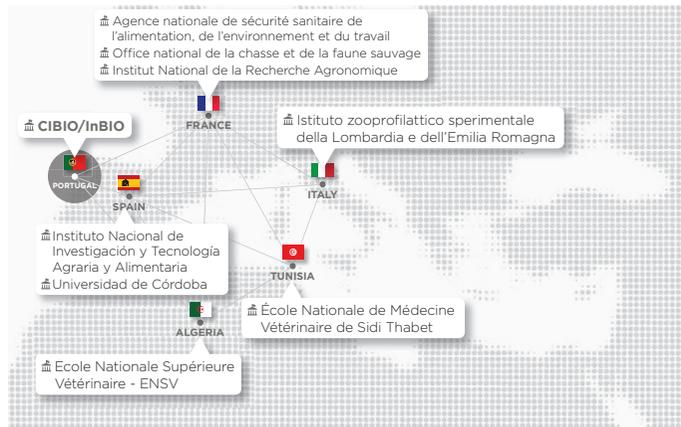
Coordinating country

Portugal

Participating countries/ 6



Partners/ 9



Coordinating institution

Rede de Investigação em Biodiversidade e Biologia Evolutiva - CIBIO/InBIO



Scientific Coordinator:
ABRANTES, Joana
jabrantes@cibio.up.pt

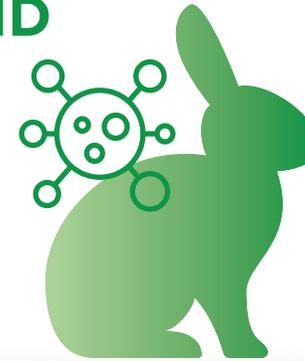
We will study RHDV-host interactions to understand the role of the rabbit immune system for further vaccine design. Finally, knowledge gathered within the proposal will be used to train stakeholders, with emphasis in the African countries, on disease diagnosis and prophylaxis, and technical management.

Expected impacts

LAGMED is expected to contribute to develop effective preventive actions, capable to reduce the negative socio-economic impact of future GI.2 outbreaks or of newly emergent RHDV genotypes of unknown origin, and to endow stakeholders with the most effective management tools. This is especially relevant for African countries of the Mediterranean basin where rabbits are promoted for poverty reduction programmes.

Rabbit Haemorrhagic Disease

RHD



SPECIFIC OBJECTIVES OF THE PROJECT

Insights into scientific knowledge on various aspects of the genus Lagovirus:

- ✓ Epidemiological: with detailed definition of host range of RHDV2 in leporidae, and mapping of the different species of lagomorphs present in the territories;
- ✓ Virological: evolution of viruses in the territory and classification of subtypes on the basis of antigenic profiles;
- ✓ Interaction between virus and host: both innate and adaptive responses, potential selection of animals with increased resistance.

