

Surveillance network of Reoviruses,  
Bluetongue and African Horse Sickness, in  
the Mediterranean basin and Europe.

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# WPI - Regional surveillance of virus activity & vaccination

## Final deliverables of the WP

- Concerning **surveillance**:
  - Evaluation of [sentinel] surveillance systems in terms of their ability to detect the infection in unvaccinated and in vaccinated populations
  - Simulation models to evaluate the sensitivity and costs of the surveillance systems
- Concerning **vaccination**:
  - Collection of information about vaccination strategies against BT and vaccines used in Europe and in the Mediterranean basin



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## **Available data (previous deliverables)**

- Concerning **surveillance**:
  - Data on sensitivity and specificity of the main tests employed in Europe. For some kits, used in some countries, data is fairly detailed. Such data is mainly from the test validation activities
  - Detailed data (from Italy and from Catalonia) on sentinel animals tested, subdivided by sentinel herds



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### **Available data (previous deliverables)**

- Concerning **vaccination**:
  - Time series concerning vaccination activities and results, of sufficient duration to allow a reliable analysis, are available only for Mediterranean countries. This data concerns both live attenuated and inactivated vaccines, of serotypes 1, 2, 4.



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## **Activities still required to produce the deliverables**

- Concerning the evaluation of **surveillance systems**:
  - Detailed data from Italy and Catalonia will be submitted to hierarchical Bayesian analysis to determine the posterior probability distributions of
    1. sensitivity and
    2. specificity of the screening tests used
    3. infection of each single sentinel herd
    4. within-herd prevalence of infection



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## Activities still required to produce the deliverables

- Concerning the evaluation of surveillance systems:
  - Details of the Bayesian analysis
    1. Data provided by the various countries participating to the project will be used to estimate the prior distributions of sensitivity and specificity of the screening tests
    2. Field data from Italy and Catalonia will be used to estimate the prior distributions of herd level and within-herd prevalence of infection
    3. The analysis will be performed in collaboration between IZSAM and CRESA (%)



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## Activities still required to produce the deliverables

- Concerning the evaluation of surveillance systems:
  - (%)
  - Details of the Bayesian analysis
    4. The procedure developed will be published and the software produced will be made available to all Medreonet participating institutes to analyze their own data
    5. The results will also be mapped in terms of
      - I. Apparent prevalence (pos/tested)
      - II. True prevalence (from the Bayesian analysis)
      - III. Sensitivity of the surveillance system (from the validation)





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## **Activities still required to produce the deliverables**

- Concerning the evaluation of **vaccination** activities:
  - Detailed data from Italy and Spain will be evaluated to determine:
    1. Vaccination coverage
    2. Post-vaccination prevalence of infection
    3. Time necessary to obtain a significant reduction of prevalence of infection
    4. → according to the serotype involved and the type of vaccine employed (live vs. Inactivated)





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