**Background**

For several decades, poultry production worldwide has been struggling with severe diseases and huge economic losses caused by Avian Coronavirus (AvCoV) infections.

AvCoV recognise no borders and have the potential to rapidly spread across regions unless proactive and coordinated international control and defence strategies are at hand.

**Control of the disease** is hampered by the variations within this virus family. As a result of its variability, the nomenclature as well as detection methods and classification of the virus strains are not consistent.

**Multidisciplinary approaches** of European countries and networking among scientists is needed to maximize the efficiency and distribution of strategies for diagnosis, control and vaccination, which are essential to solve a serious animal disease and economic problem on a European level.

This **COST Action** creates a network between scientists with expertise in AvCoV. It stimulates cooperation between researchers, fosters harmonization of nomenclature and classification, and facilitates surveillance.

Five interlinked **Working Groups** have been established which dealt with Molecular Virology, Serology and Immunology, Clinic and Pathology, Epidemiology and conceptualizing an infrastructure for collaborative research, respectively.

The COST Action provided the possibility to **connect** researchers working on the topic and thereby enabled them to use their resources more efficiently. European poultry producers, industry, veterinarians and consumers benefit from results generated in the course of this Action.

**Objectives and Achievements**

**Network**

**Collaboration and sharing** information between scientists and with industry, veterinarians, farmers, and policy stakeholders.

COST Action FA1207 has:
- gathered an outstanding multidisciplinary community in 25 countries with 176 participants
- built a common scientific and technological culture among its members and the production of research data
- deepened the cooperation in Europe in order to overcome the difficulties noted in regulation, standardization and harmonization of test procedures and diagnostic methods
- established a powerful collaboration between EU countries, which is crucial for risk assessment and warning strategies on European level
- generated an expert website with links to Cost Action members for advice, materials and protocols
- held 14 scientific meetings in 11 participating countries

**COST FA1270 partners in yellow:** 25 participating countries; 28 academic partners, 21 veterinary institutes, 8 industrial partners, and 5 others.
A multidisciplinary approach was taken to achieve a broader understanding and knowledge of the diseases caused by AvCoVs by focusing on molecular virology, epidemiology, diagnosis, serology, immunology, pathogenesis, and vaccination.

COST Action FA1207 has resulted in:
- Development and adoption of a general AvCoV classification
- Development and adoption an internationally approved AvCoV nomenclature
- Definition of standardised detection technologies for fast and precise AvCoV typing and subtyping
- Assessment of typing methods by Proficiency Testing Schemes with partner laboratories
- Sampling protocol
- Development of a consensus genotyping method
- Insight in the role of wild birds in AvCoV epidemiology
- Increased understanding of tissue tropism

Cost Action partners and young researchers were educated and trained.

COST Action FA1207 has:
- Educated and trained workforces of Action partners via scientific exchange visits, lectures and seminars
- Educated and trained Action partners, particularly young researchers via Short Term Scientific Missions (STSMs) and Training Schools
- Workshops for Early Career Investigators including Scientific Presentation Skills, 12 STSMs, 4 Training Schools, and a LinkedIn forum

Established COST FA1270 Network; in yellow output such as grant applications, joined publications and in blue exchange and collaborations such as protocols materials and visiting scientists.

More information can be found on:
http://cost-controllingaviancoronaviruses.org/
http://www.cost.eu/COST_Actions/fa/FA1207

Achievements and Dissemination

Highlights
- An internationally accepted viral nomenclature
  Recommendations for a standardized avian coronavirus (AvCoV) nomenclature: outcome from discussions within the framework of the European Union COST Action FA1207: "towards control of avian coronaviruses: strategies for vaccination, diagnosis and surveillance", Ducatez MF; European Union COST Action FA1207. Avian Pathology, 2016

- S1 gene-based phylogeny of infectious bronchitis virus

- Report of the proficiency testing scheme organised within the COST Action FA1207
  Zohari S, and collaborators

- Harmonised and optimised sampling protocols
  Savić V and collaborators

- Factors influencing the outcome of infectious bronchitis vaccination and challenge experiments

- Comparative pathology of avian coronaviruses: a review