

Doctor Ilaria Capua

Head of Virology Department at Istituto Zooprofilattico Sperimentale delle Venezie

Born in Rome in 1966, Ilaria Capua graduated in Veterinary Medicine with honours from the University of Perugia in 1989, after which she obtained her postgraduate qualification as a specialist in Animal Health and Hygiene from Pisa University in 1991.



She is currently Head of the Virology Department at Istituto Zooprofilattico Sperimentale delle Venezie, Padova, Italy and Head of the National, FAO and OIE (World Organisation for Animal Health) Reference Laboratories for Avian Influenza and Newcastle disease.

Her team of 45 staff consists of three units: one that carries out diagnostic activity; one that produces diagnostic reagents and evaluates vaccines; and one that performs research at an international level. Her laboratory annually hosts several scientists from developed and developing countries for training and collaborative research projects.

Between 1999 and 2003 Dr. Capua was directly involved in managing several avian influenza and Newcastle disease epidemics and in 2000 developed the DIVA (Differentiating Vaccinated from Infected Animals) strategy, based on heterologous vaccination, to combat avian influenza. This strategy, the first ever developed to combat avian influenza by vaccination while still enabling the trade of products, resulted in the eradication of avian influenza at that time in Italy and was approved by the EC and the OIE.

Dr. Capua regards DIVA as her greatest achievement to date. Having invented it, developed it and applied it successfully in the field, she is delighted that it is still being proposed today as a tool to combat avian influenza throughout the world.

During her career as a veterinary virologist her work has been recognized with her nomination as OIE and FAO expert for avian influenza and Newcastle disease. She has further been commended by the Director General of OIE for the development and validation of the DIVA strategy to combat avian influenza.

Since 1995 she has been involved with the European Commission, participating in meetings and working groups on viral diseases of poultry and mammals, including avian influenza, Newcastle disease, foot-and-mouth disease, classical swine fever and Crimean-Congo haemorrhagic fever. As a member of working groups of the Scientific Committee on Animal Health and Animal Welfare of the European Commission, she has participated in the preparation of scientific reports published by the Commission on these diseases. Dr. Capua participates in Global Influenza Pandemic Preparedness meetings and programmes at the WHO, FAO and the European Commission.

In 2005 she was nominated as Chairman of OFFLU – the newly established OIE/FAO network on avian influenza. This network has the role of supporting developing countries in managing the avian influenza crisis and offering veterinary expertise to complement

the international efforts of the medical community in managing the pandemic threat posed by avian influenza.

She is currently a member of the Panel on Animal Health and Animal Welfare of the European Food Safety Authority (EFSA), and Chairman of EFSA's working group on avian influenza. She has participated in several OIE working groups to re-write the chapters of the OIE Manual and Code on avian influenza, and in working groups of the European Commission for the new avian influenza directive.

She is vice coordinator of the EU project AVIFLU funded for 2002-2006 and has recently been granted €1.2 million to coordinate an 11 partner project on avian influenza called FLUAID. This program is targeted at supporting the Asian avian influenza crisis, developing an EU vaccine bank for avian influenza and investigating other aspects of avian influenza.

Most recently, Dr. Capua is coordinator of the workpackage on Avia Influenza of EPIZONE scientific excellence network, which has been set up to improve control of epizootic diseases in Europe. It consists of more than 300 researchers from 16 international research centres – two of them outside Europe (in China and Turkey). Epizone is a new European Commission project under the sixth research framework programme (FP6), priority 5 (food quality and safety), and will have a budget of €14 million over five years.

To date Dr. Capua has been invited to give 73 lectures as an international expert and as a guest lecturer at training courses in Europe, the US, Central and South America, Africa and Asia. Dr. Capua has authored over 180 publications, predominantly on viral diseases of poultry, including papers published in international refereed journals, papers and abstracts published in the proceedings of conferences, guest editorials, reviews, chapters of books, and has co-authored an atlas and text on avian influenza.

AVIFLU: Pathogenesis and improved diagnosis and control of avian influenza infections

Until recently, little was known about how avian influenza was transmitted in chickens, or how vaccines reduced transmission. The AVIFLU project is seeking to quantify the effects of vaccination on transmission dynamics. Researchers have shown that two commercially available vaccines against H7 subtypes not only protect chickens against mortality and morbidity, but also reduce the spread of the virus within a flock to such an extent that a major outbreak can be prevented, although some slaughtering may still be necessary.

The project has been extended to enable researchers to conduct additional experiments to assess the role that waterfowl may play in the epidemiology of the H5N1 outbreak in Asia. Preliminary results on the efficacy of one commercial vaccine in ducks are encouraging, suggesting that Europe may need to consider implementing prophylactic vaccination programmes to protect against the inevitable arrival of H5N1.

Project Coordinator is Dr. Jill Banks (j.banks@vla.defra.gsi.gov.uk)

FLUAID: Generation of information and tools to support the management of the avian influenza crisis in poultry

The main goal of this project, which complements AVIFLU, is the joint development and application of novel diagnostic tools and vaccines to combat avian influenza in poultry. Researchers will conduct pilot studies and trial candidate vaccines and build up a European vaccine bank from which appropriate vaccines can be selected and commercially produced in the event of an avian influenza outbreak in poultry.

On the diagnostic side, the partners will work together on technologies that are able to differentiate between vaccinated birds and those that have been infected with wild-type virus.

The project will also look into routes of virus transmission and its persistence in carcasses. The results of this study will be especially important to decision-makers as they design and implement strategies to manage avian influenza in European poultry.

Project Coordinator is Dr. Ilaria Capua (icapua@izsvenezie.it)

EPIZONE: Network of excellence for epizootic disease diagnosis and control

The consequences of epizootic infections can be devastating, but research into preparedness, prevention, detection, and control of epizootics is not the task of one laboratory, nor the responsibility of each Member State. The problem has to be tackled across the whole production chain of animal-related food.

The EPIZONE Network of Excellence provides a structure at the European level to facilitate this united effort. It brings together the research of 20 institutions from ten European countries, along with China and Turkey. Its focus is on sharing expertise and spreading excellence between more than 250 associated scientists.

EPIZONE will also manage its own scientific work programmes. Research will cover diagnostics, intervention strategies, surveillance and epidemiology, and risk assessment.

Project Coordinator is Dr. P. A. van Rijn (Piet.vanRijn@wur.nl)

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