



# Research in rabbit science. University of Bari

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# Faculty of Veterinary Medicine



# Department of Veterinary Public Health and Animal Sciences



## Section of Avian Pathology

Diseases of poultry

Diseases of rabbits

# Section of Avian Pathology



## Activities in Rabbit Sciences

- 😊 Courses on “Hygiene and Diseases of Rabbits” for students in Veterinary medicine
- 😊 Diagnostics and Assistance for Technicians and Rabbit Producers
- 😊 Clinical Activities in pet rabbits
- 😊 Research Activity in Rabbit diseases

# Research in rabbit diseases



## Enteric diseases of rabbits

*E. coli* infections

Epidemiology and  
Characterization of  
Entero Pathogenic  
*Escherichia coli* (EPEC)

Rotavirus infections  
Astrovirus Infections

Epidemiology and  
genetic Characterization

# Enteric Disorders in Rabbit



- Effect of the administration of prebiotics and forerunners of prostacyclines on the Entero Pathogenic *E. coli* enteritis in rabbits

## Final purpose

Administration of feed without antibiotics in weaning and fattening rabbits

Proceedings - 8th World Rabbit Congress –September 7-10, 2004 – Puebla, Mexico

### **VIRULENCE GENES AND ANTIMICROBIAL RESISTANCE PATTERNS OF ENTEROPATHOGENIC *ESCHERICHIA COLI* FROM RABBITS IN SOUTHERN ITALY**

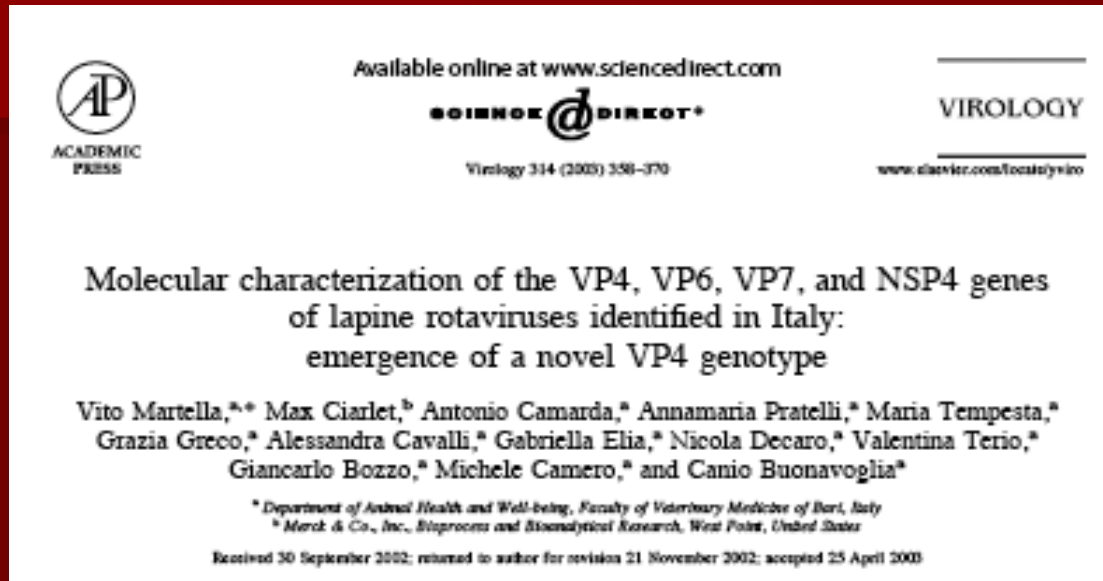
**CAMARDA A., PENNELLI D., BATTISTA P., MARTELLA V., GRECO L., ALLOGGIO I., MAZZOLINI E.\***

Dipartimento di Sanità e Benessere degli Animali. Università degli Studi di Bari. Facoltà di Medicina Veterinaria. S. P. per Casamassima Km 3, 70010 Valenzano – Bari. Italia.

\*Istituto Zooprofilattico Sperimentale delle Venezie Sez. di Udine

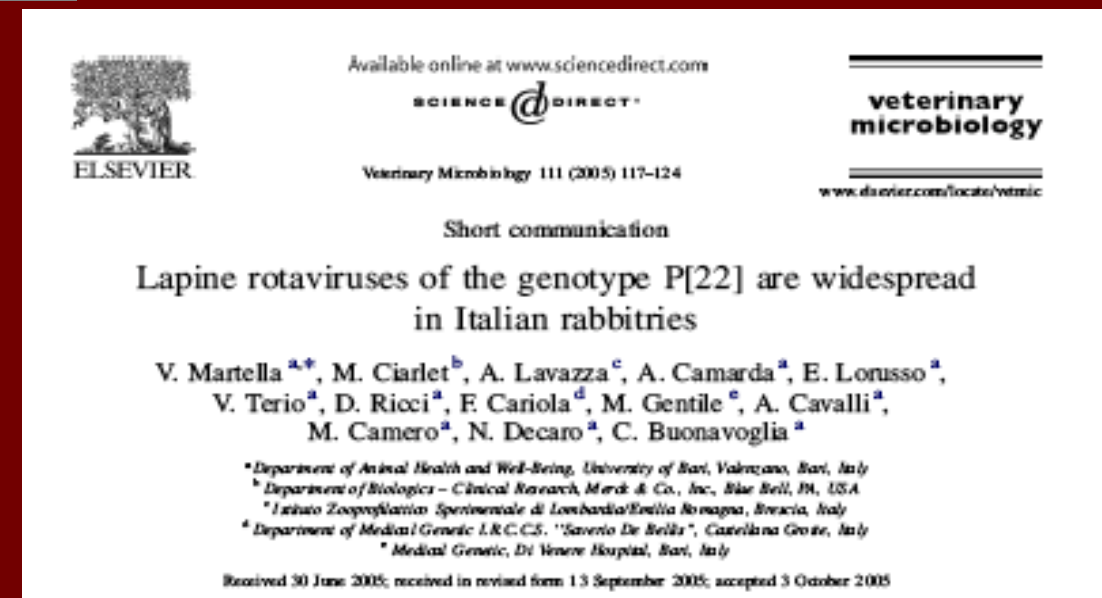
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# Enteric disorders in Rabbit

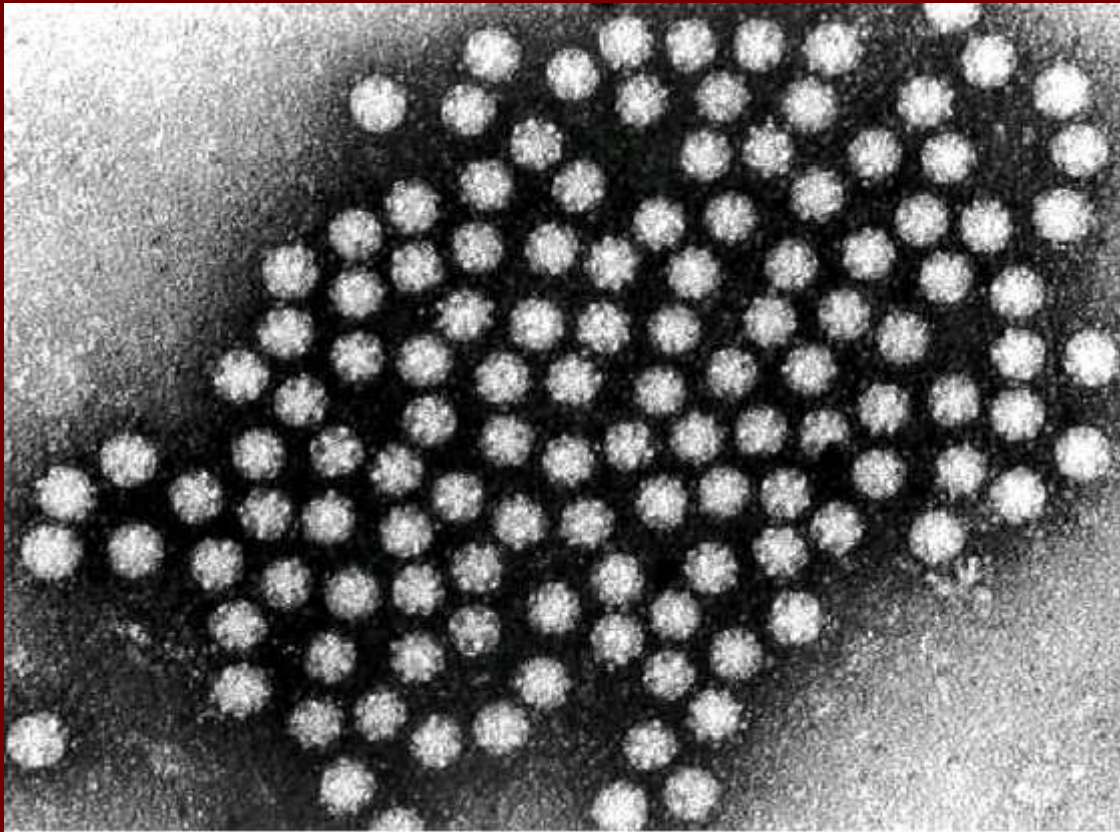


## Evaluation of the genotypes of Rotavirus circulating in rabbitries of Italy

## Evaluation of the effects of Rotavirus infections on the enteritis of rabbit



# Enteric Disorders in Rabbit



Evaluation of the genotypes  
of Astrovirus circulating in  
rabbitries of Italy

Evaluation of the effects of  
Astrovirus infections on  
the enteritis of rabbit

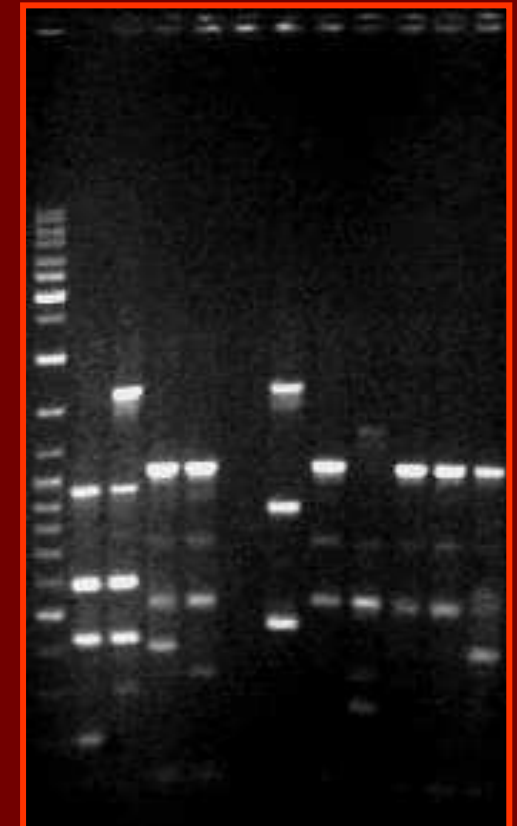


# Staphylococcosis in rabbits



Evaluation of virulence genes in *Staphylococcus aureus* isolated from rabbits

Phenotypic and genetic characterization of *Staphylococcus aureus* isolated in Italy from rabbits



# A New Topic



*Medical Mycology* 2010, Early Online, 1–6

**informa**  
healthcare

## **Epidemiology and risk factors for dermatophytoses in rabbit farms**

C. CAFARCHIA\*, A. CAMARDA\*, C. COCCIOLI\*, L. A. FIGUEREDO\*, E. CIRCELLA\*, P. DANESI†, G. CAPELLI† & D. OTRANTO\*

*\*Dipartimento di Sanità Pubblica e Zootecnia, Facoltà di Medicina Veterinaria Università degli studi di Bari, Italy, and  
†Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro, Padova, Italy*

🍌 **First: Epidemiology of Dermatophytoses in rabbit farms**

## **Evolution and next steps**

🍌 **Pharmacological Control**

🍌 **Immunity and vaccination**



# Diseases of Poultry

# DERMANYSSUS GALLINAE



Vet Res Commun  
DOI 10.1007/s11259-009-9210-y

ORIGINAL ARTICLE

Characterization of *Dermanyssus gallinae*  
(Acarina: Dermanyssidae) by sequence analysis  
of the ribosomal internal transcribed spacer regions

L. Potenza • M. A. Cafiero • A. Camarda •  
G. La Salandra • L. Cucchiari • M. Dachà

JEADV ISSN 1468-3083

**Pseudoscabies caused by  
*Dermanyssus gallinae* in Italian city  
dwellers: a new setting for an old  
dermatitis**

MA Cafiero,\*† A Camarda,‡ E Circella,‡ G Santagada,†  
G Schino,† M Lomuto§  
†Istituto Zooprofilattico Sperimentale della Puglia e della  
Basilicata, Foggia, Italy, ‡Department of Public Health and  
Animal Husbandry, University of Bari, Valenzano, Bari, Italy,  
§School of Dermatology, Università Cattolica del Sacro Cuore,  
Roma, Italy, \*Corresponding author, Istituto Zooprofilattico  
Sperimentale della Puglia e della Basilicata, Via Manfredonia  
20-71100 Foggia, Italy; tel. +39 0881 786326;  
fax +39 0881 786369; E-mail: ma.cafiero@izsfg.it

Phylogenetic aspects

Human infestation

*Dermanyssus gallinae*

Control of infestation

Vectorial role

Exp Appl Acarol (2009) 48:11–18  
DOI 10.1007/s10493-008-9224-0

Evaluation of the poultry red mite, *Dermanyssus gallinae*  
(Acari: Dermanyssidae) susceptibility to some acaricides  
in field populations from Italy

M. Marangi • M. A. Cafiero • G. Capelli • A. Camarda •  
O. A. E. Sparagano • A. Giangaspero

Parassitologia 2010

Vectorial role of *Dermanyssus gallinae*: old and new knowledges

Camarda A.,<sup>1</sup> Circella E.,<sup>1</sup> Cafiero MA,<sup>2</sup> Giangaspero A.,<sup>3</sup> Sparagano OEA.,<sup>4</sup> Pugliese N.<sup>1</sup>

<sup>1</sup> Dipartimento di Sanità Pubblica e Zootechnia, Università degli Studi di Bari, Italy; <sup>2</sup> Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Foggia, Italy; <sup>3</sup> Dipartimento PRIME, Università di Foggia, Italy <sup>4</sup> School of Agriculture, Food and Rural Development, Newcastle University, UK.

# E. Coli infections in Poultry

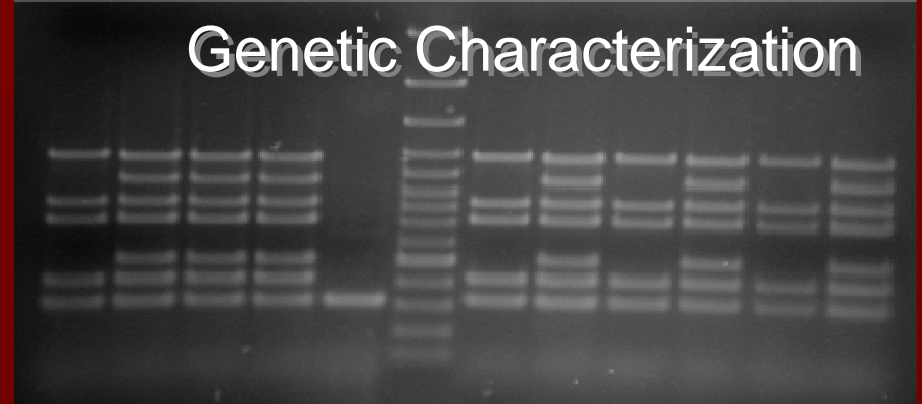


ITAL.J.ANIM.SCI. VOL. 8, 775-779, 2009

## Virulence - associated genes in Avian Pathogenic *Escherichia coli* of turkey

Elena Circella<sup>1</sup>, Donato Pennelli<sup>2</sup>, Silvia Tagliabue<sup>2</sup>,  
Raffaella Ceruti<sup>3</sup>, Davide Giovanardi<sup>4</sup>, Antonio Camarda<sup>1</sup>

## Genetic Characterization



# *E. coli*

## Antimicrobial resistance

ITAL.J.ANIM.SCI. VOL. 8, 771-774, 2009



## Multiple antimicrobial resistance among Avian *Escherichia coli* strains in Albania

Tana Shtylla<sup>1</sup>, Elena Circella<sup>2</sup>, Anna Madio<sup>2</sup>, Giancarlo Di Paola<sup>2</sup>,  
Pranvera Çabeli<sup>1</sup>, Ilirian Kumbi<sup>1</sup>, Alda Kika<sup>3</sup>, Antonio Camarda<sup>2</sup>

<sup>1</sup>Veterinary Medicine Faculty, University of Tirana, Albania

<sup>2</sup>Dipartimento di Sanità Pubblica e Zootecnia, Università di Bari, Italy

<sup>3</sup>Natural Sciences Faculty, University of Tirana, Albania

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# *Salmonella gallinarum, S. enteritidis, S. Typhimurium*



- Genetic identification
- Immunological control – Vaccine tests
- Epidemiology
- Antibiotic resistance

# Research on Viruses infections in poultry



- Coronavirus
- Reovirus
- Circovirus (BFDV)

*Avian Pathology* (June 2007) **36(3)**, 251–258



Taylor & Francis  
Taylor & Francis Group

## Coronavirus associated with an enteric syndrome on a quail farm

Elena Circella<sup>1\*</sup>, Antonio Camarda<sup>1</sup>, Vito Martella<sup>1</sup>, Giordano Bruni<sup>1</sup>, Antonio Lavazza<sup>2</sup> and Canio Buonavoglia<sup>1</sup>

<sup>1</sup>*Dipartimento di Sanità e Benessere degli Animali, Facoltà di Medicina Veterinaria, Università degli Studi di Bari, S.P. Casamassima Km 3, 70010 Valenzano, Bari, Italy, and* <sup>2</sup>*Istituto Zooprofilattico Sperimentale della Lombardia ed Emilia Romagna, Sezione di Brescia, Italy*



# Laboratory features



# Routine applications

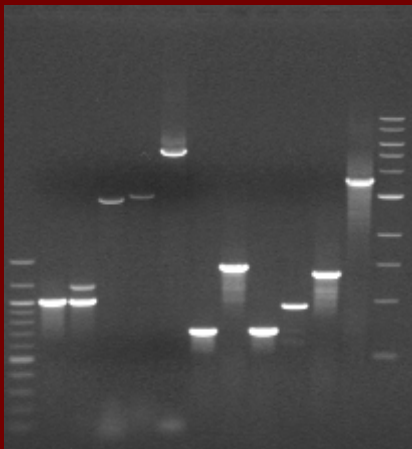
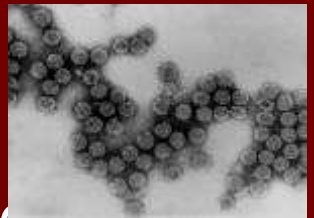


## Pathogens detection and identification

Bacterial pathogens (i.e. *Salmonella* spp., *Mycoplasma* spp., *Chlamydia* spp., *Campylobacter* spp.)

DNA viruses (i.e. Circovirus, APV, Fowl Pox Virus)

RNA viruses (i.e. Reovirus, Astrovirus, Newcastle Disease Virus, Orthomyxovirus)



## Pathogens characterization

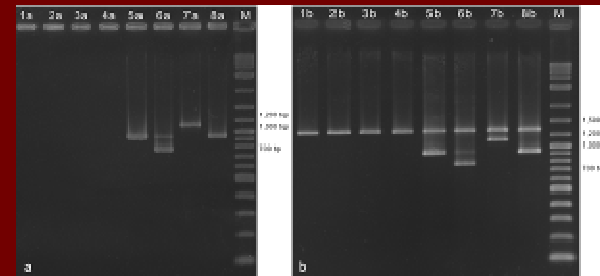
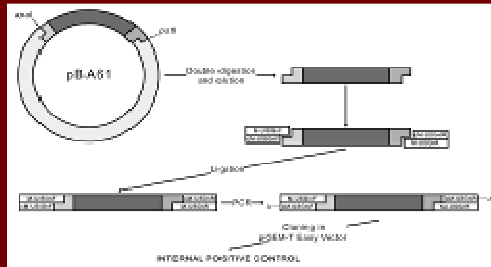
- › Detection of virulence genes and/or pathogenicity islands
- › Detection of antimicrobial resistance genes



# R&D



- **Design, set up and validation of new molecular protocols for detection and identification of pathogens**



- **Evolutionary studies**

- *In silico* genome comparisons
- Phylogenetic studies based on polymorphic loci

- **Microbial population studies**

- Characterization of microbial communities through rRNA 16S analysis
- Definition of resistomes

- **Functional genetic studies**

- Isolation, cloning and characterization of microbial genes
- Expression studies

# Collaborations



- **University of Bari (Italy)**
  - DISPEZ - Section of Infectious Diseases
  - DISPEZ – Section of Parasitology
  - DEPT. of Genetic and Microbiology
- **University of Foggia (Italy)**
  - PrIME and Centro Interdipartimentale Bioagromed
- **University of Urbino (Italy)**
  - Dept. of Biomolecular Sciences
- **Istituto Zooprofilattico Sperimentale della Puglia e Basilicata (Italy)**
- **Newcastle University (UK)**
  - School of Agriculture, Food and Rural Development
- **Tirana University**
  - Faculty of Veterinary Medicine
- **Fatro pharmaceuticals**
- **Bayer Animal Health**



