



PARTNERS IN
PROGRESS

Most Common Bacterial Poultry Diseases & Impact of AMR

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Bacteriological tests identify bacteria

In the bacteriological test, we are looking for bacteria, not the cause of disease



The course of the microbiological examination

Stage 1: Taking samples from internal organs



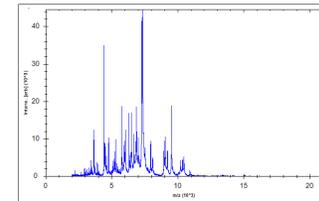
Stage 2: Inoculation on microbiological media



Stage 3: Morphological classification of grown colonies



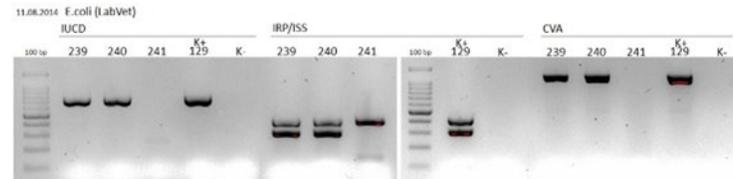
Stage 4: Detailed identification of bacterial isolates (Maldi ToF, Biochemistry, serology)



Stage 5: Performing an antibiogram



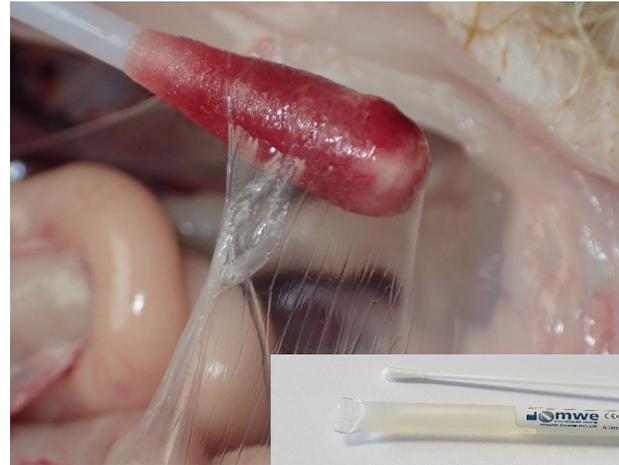
Stage 6: Additional tests (PCR, sequencing, etc.)



INTERPRETATION OF THE RESULTS

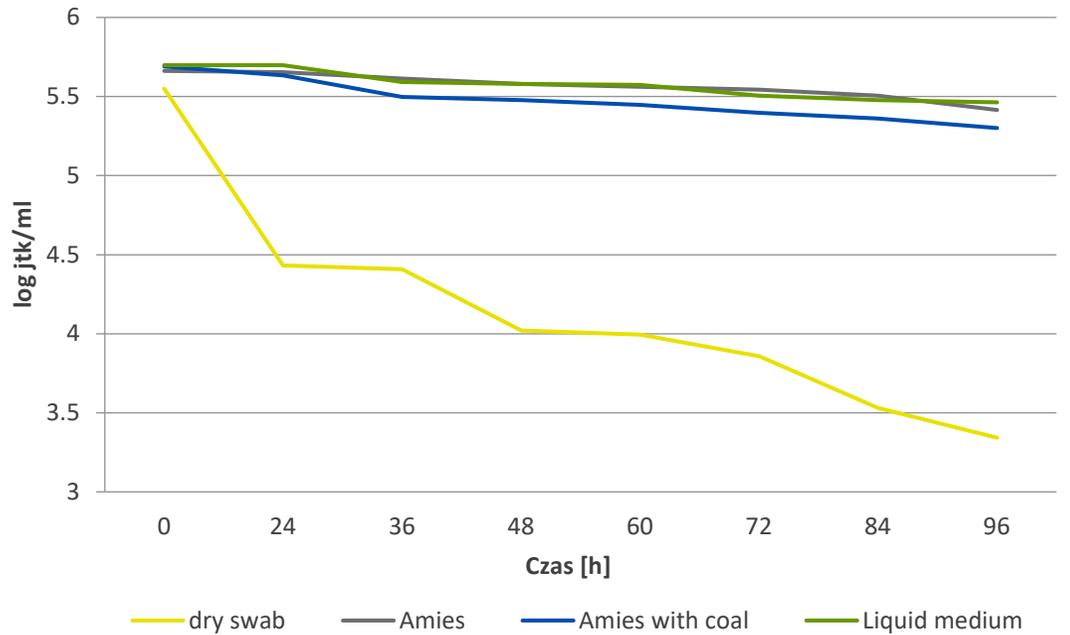
Sampling and transport - the most critical moment

- Time
- Environmental temperature during transport
- Contamination with environmental microflora

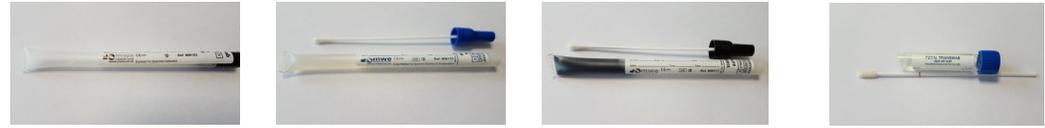
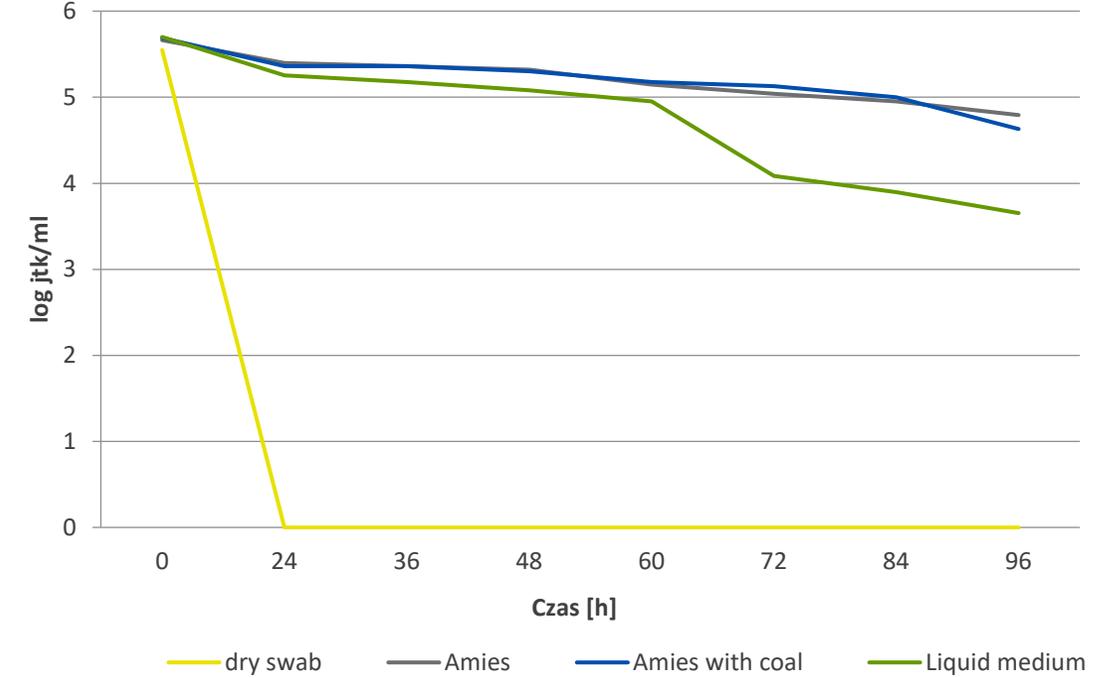


Transport medium, time and temperature influences *Ornithobacterium rhinotracheale*

ORT - 0°C

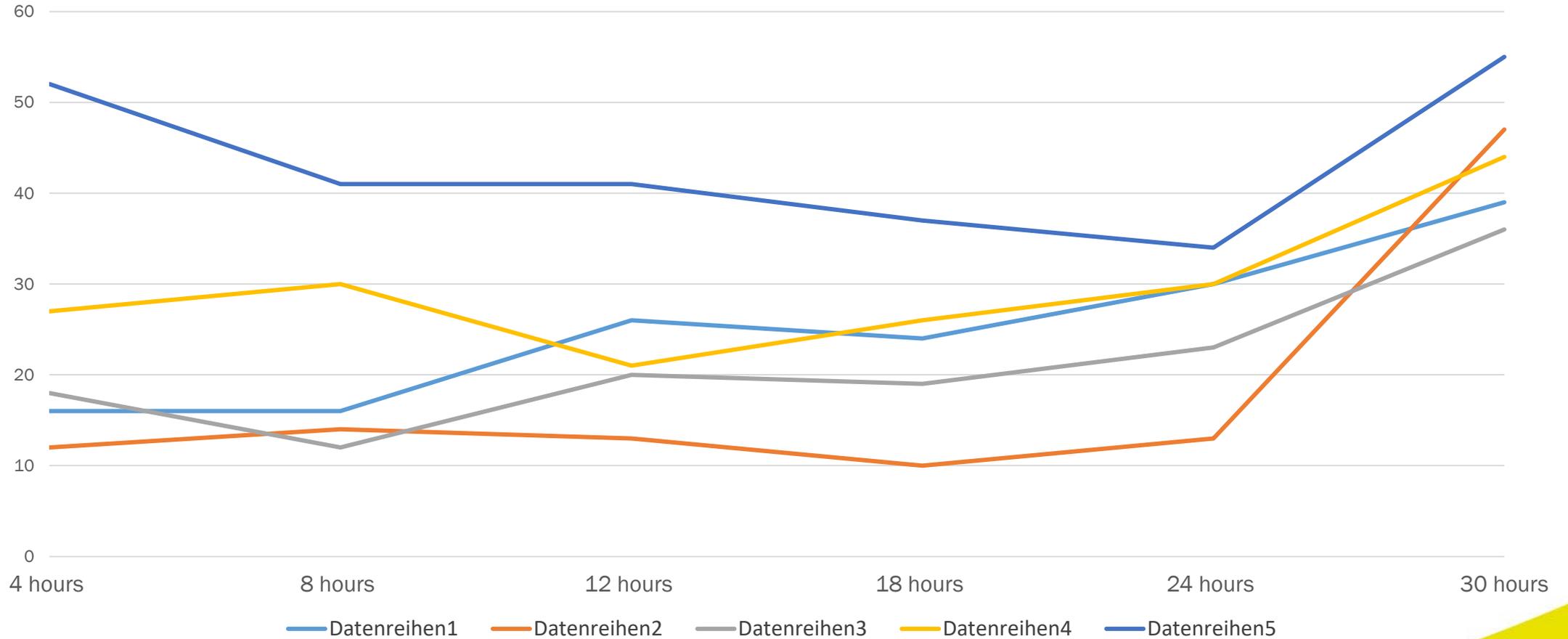


ORT - 22°C

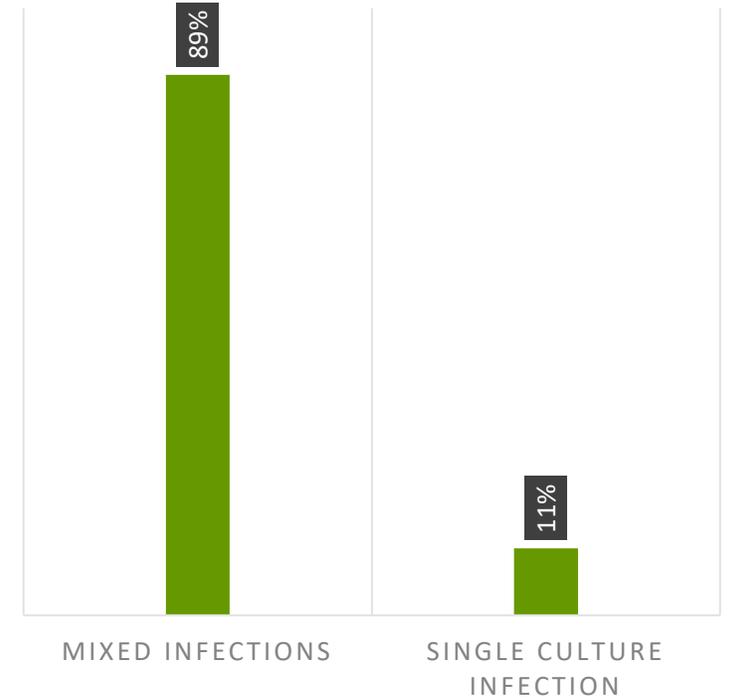
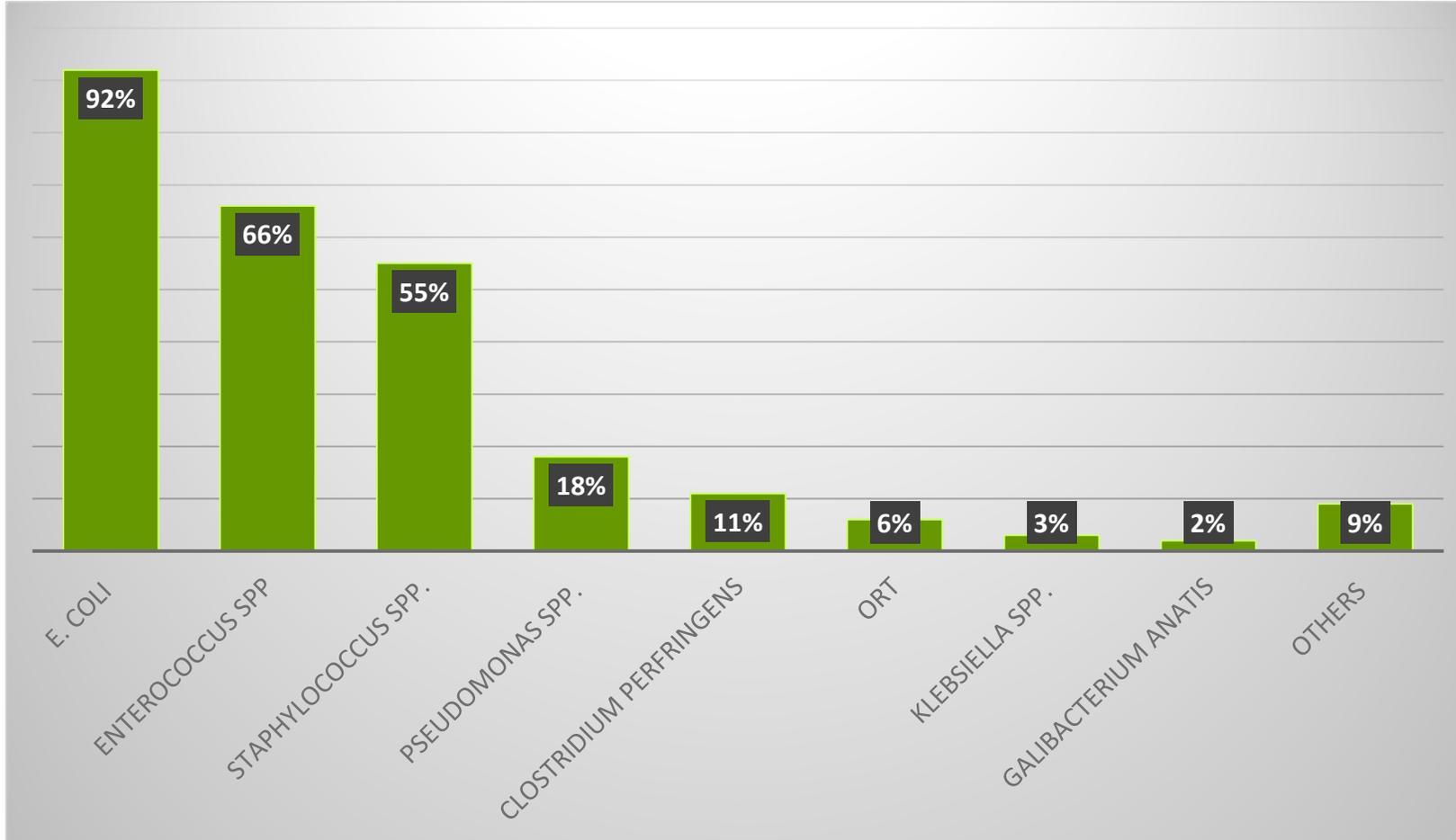


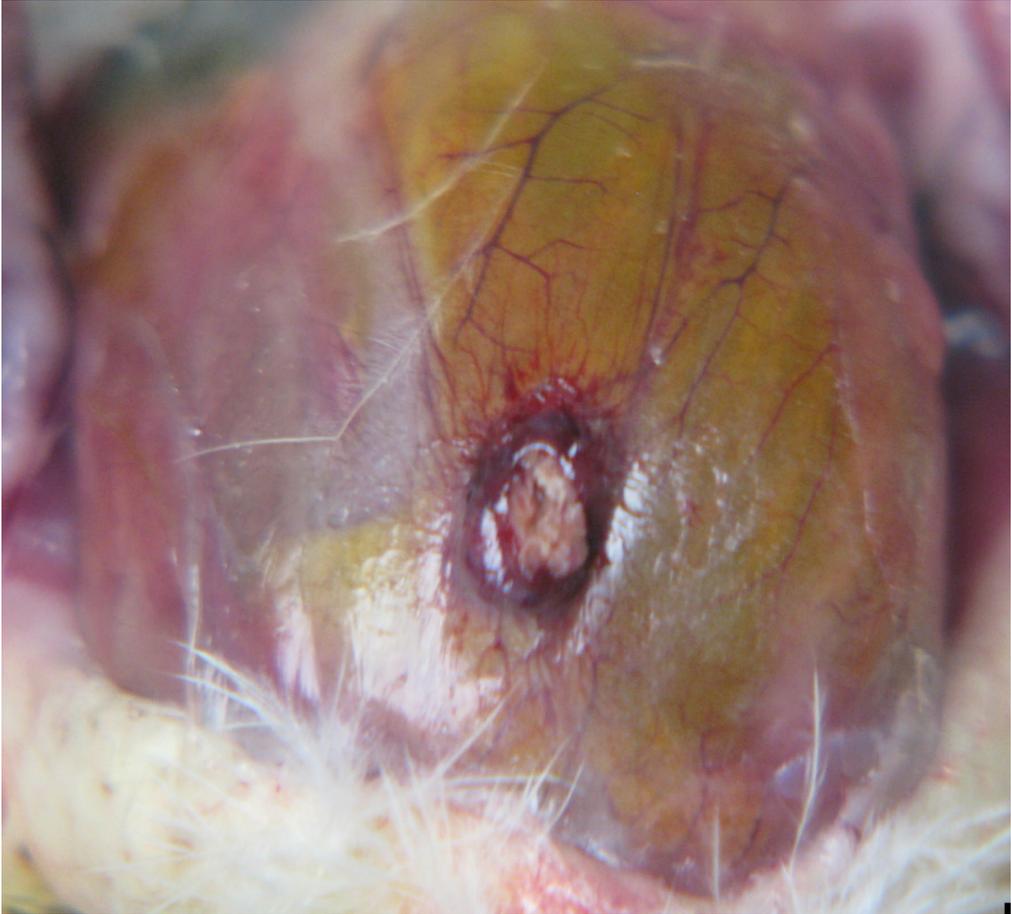
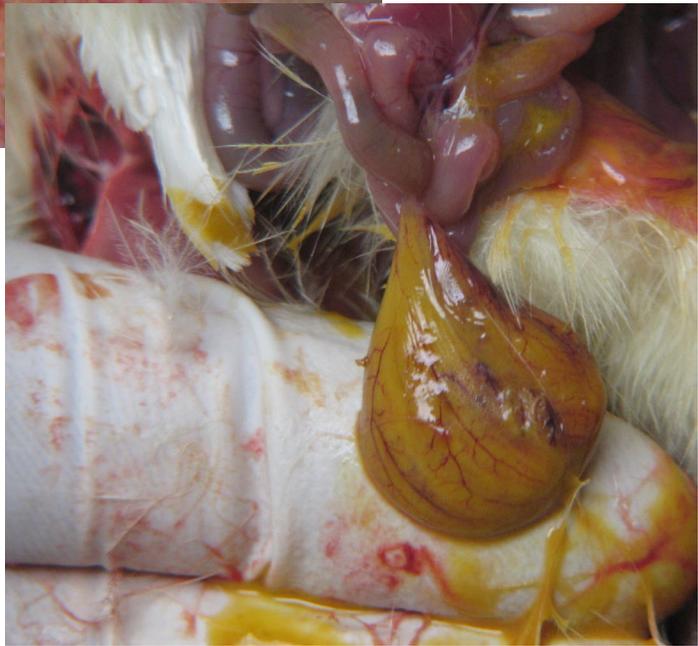
Transport time influences microorganisms in the tested sample

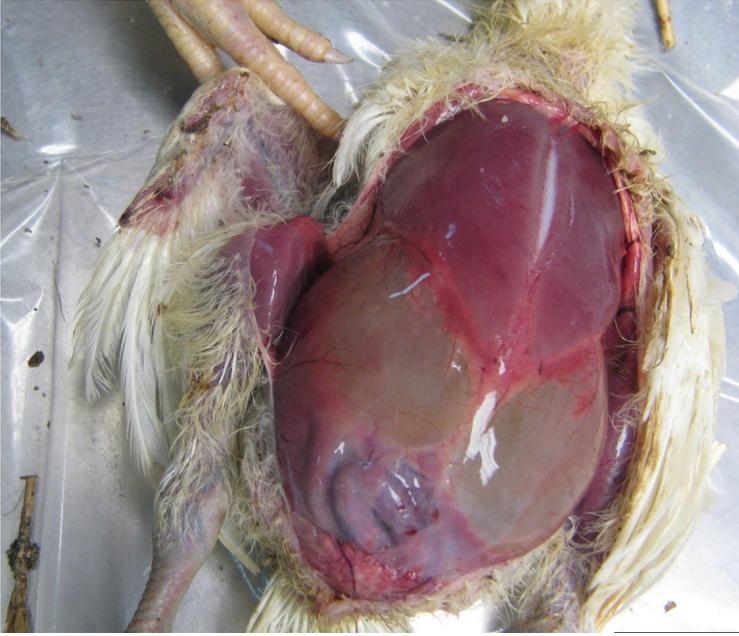
Total Count of Bacteria in different types of contaminated samples

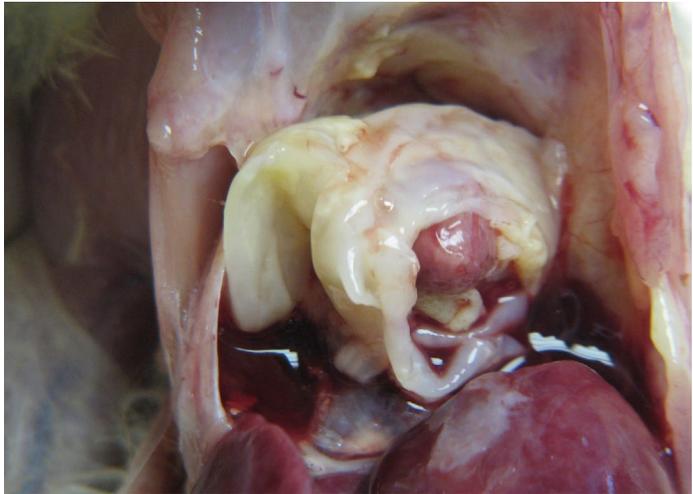


The most commonly found bacteria isolated from CB in our lab



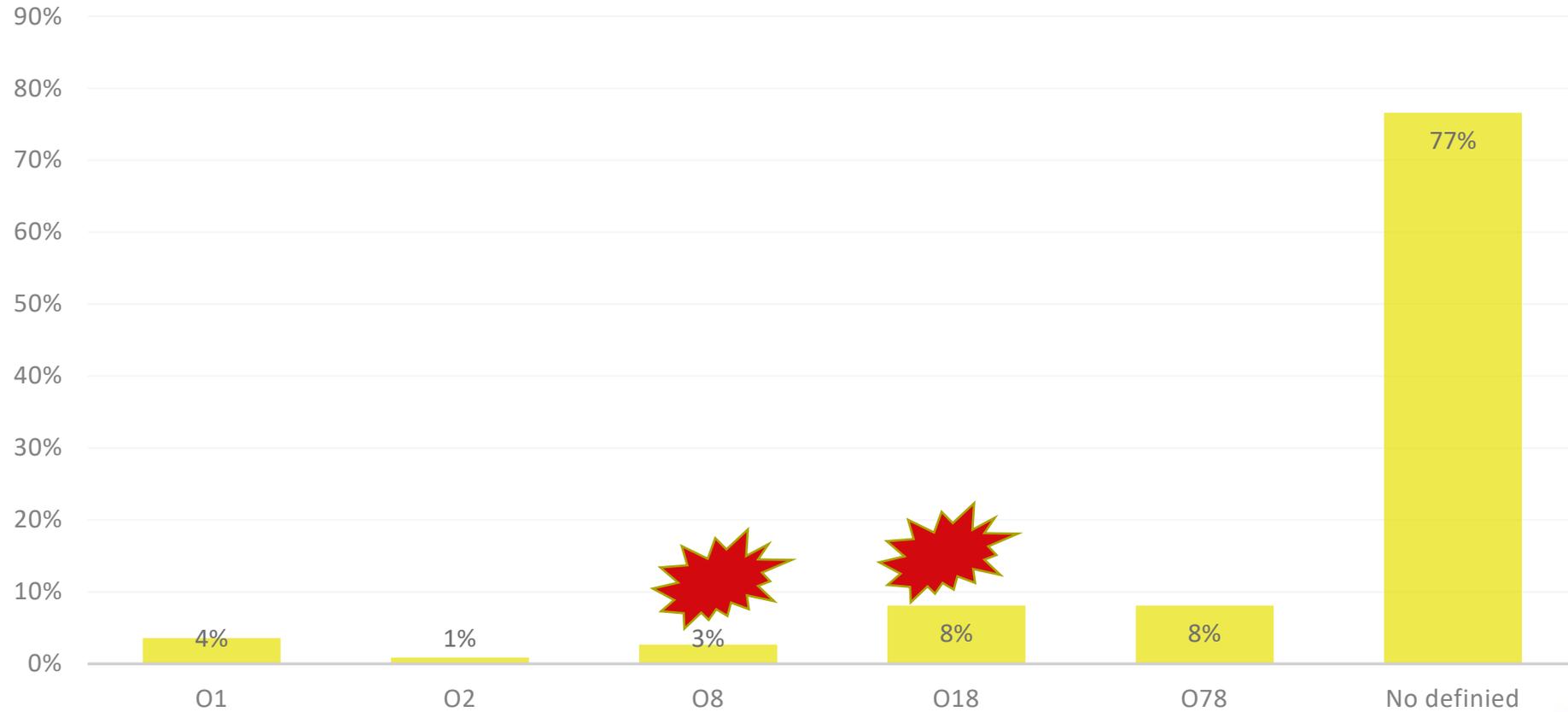






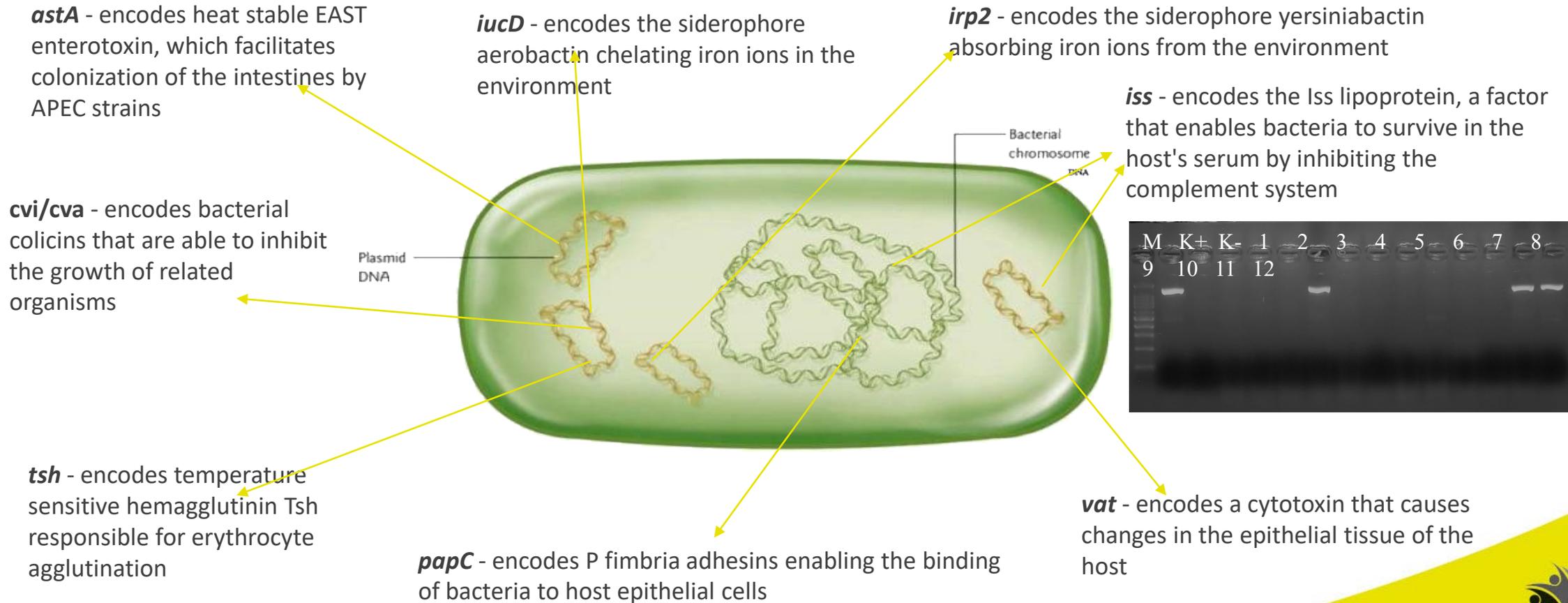
The most common *E. coli* serotypes

111 *E. coli* isolates from clinical outbreak

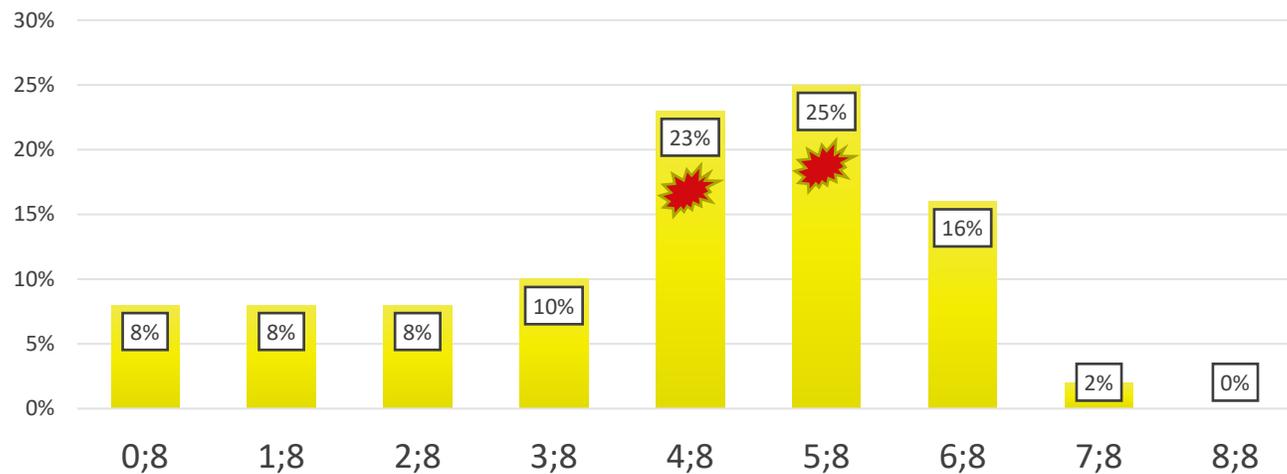
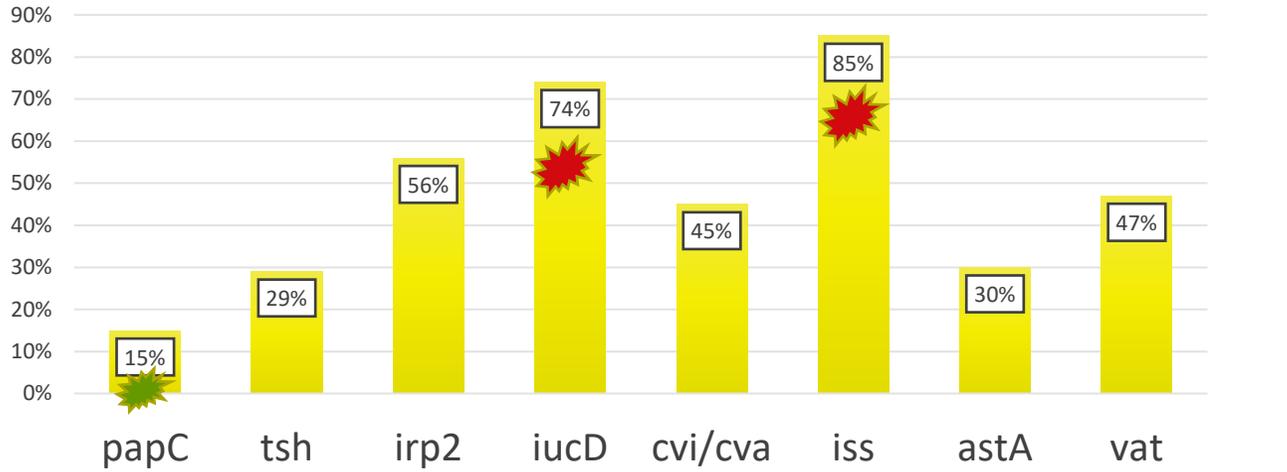


VAGS – virulence associated genes of E. coli

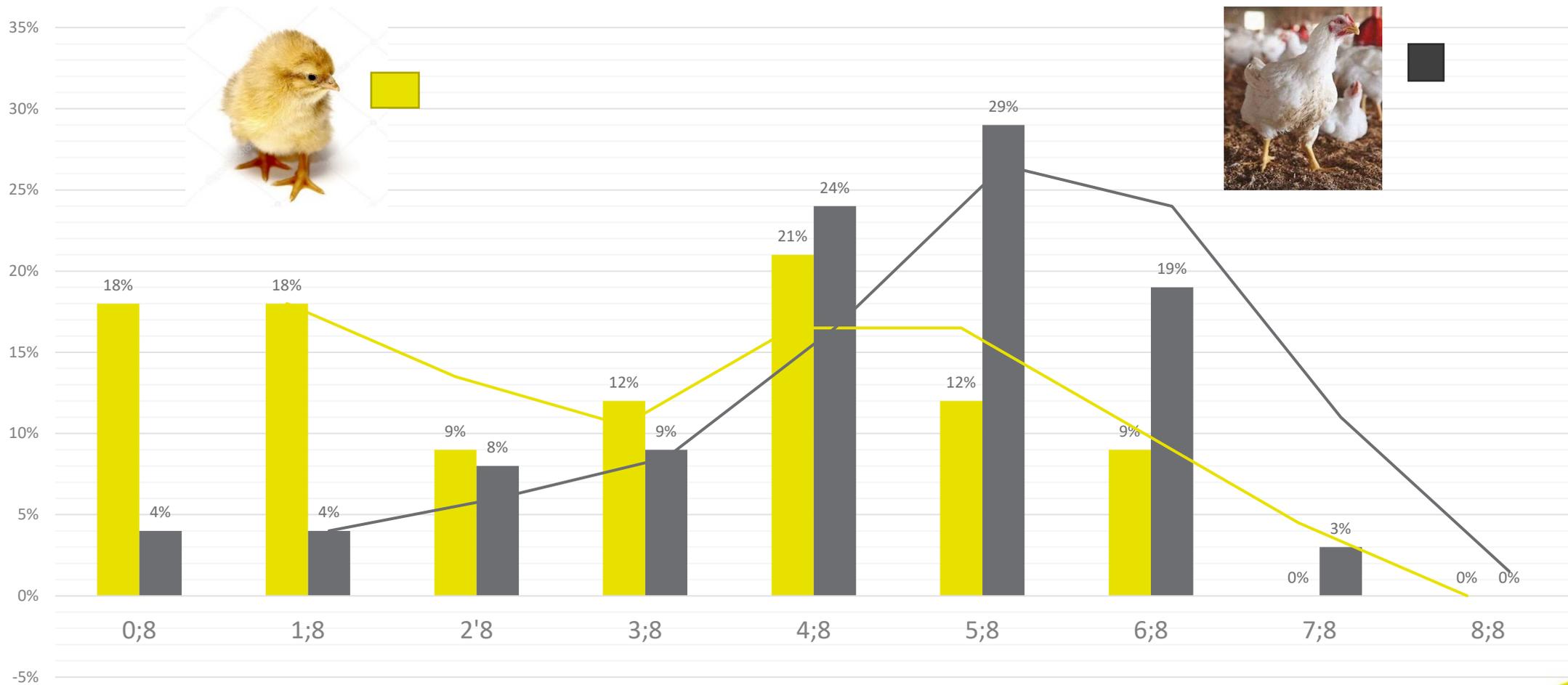
Virulence factors encoded by genes located in pathogenic islands (PAIs) of chromosomes or plasmids



111 *E. coli* isolates from clinical outbreak

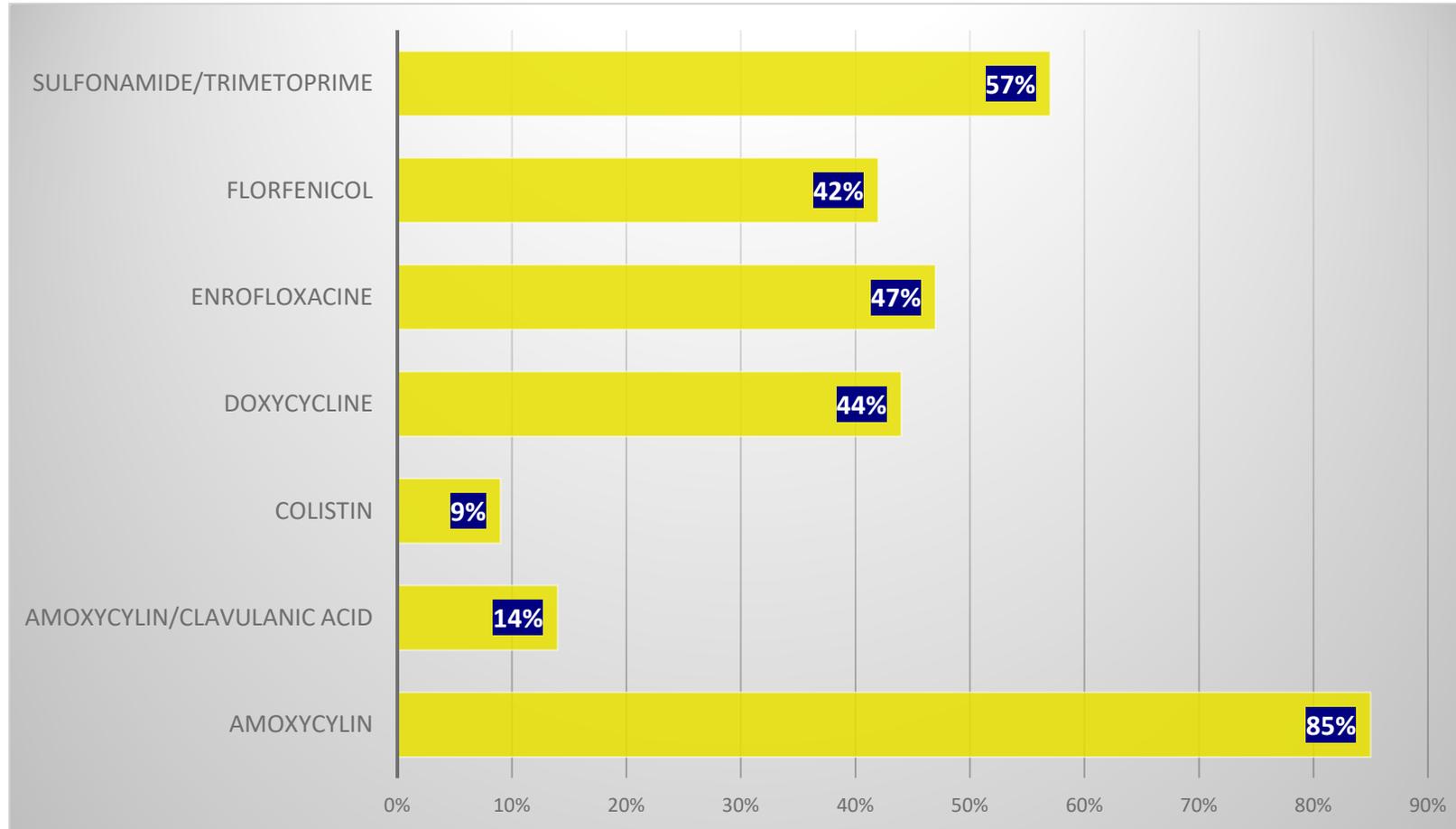


Occurrence of *E. coli* genes in chicks and hens



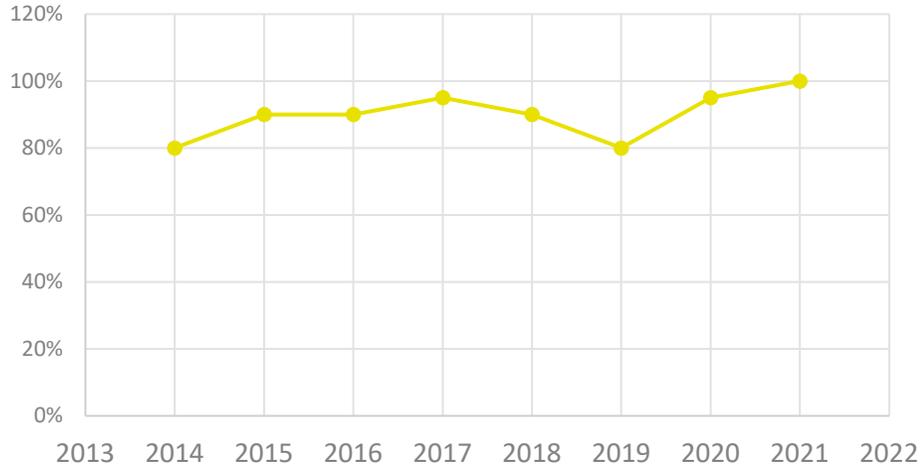
Antimicrobial resistance of *E. coli* isolates

320 *E. coli* isolates from clinical cases for broiler chicken

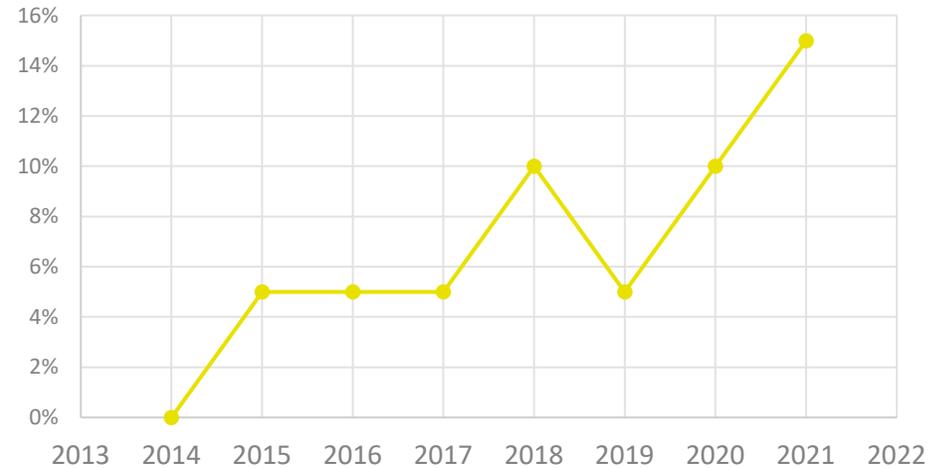


E. coli drug resistance trends

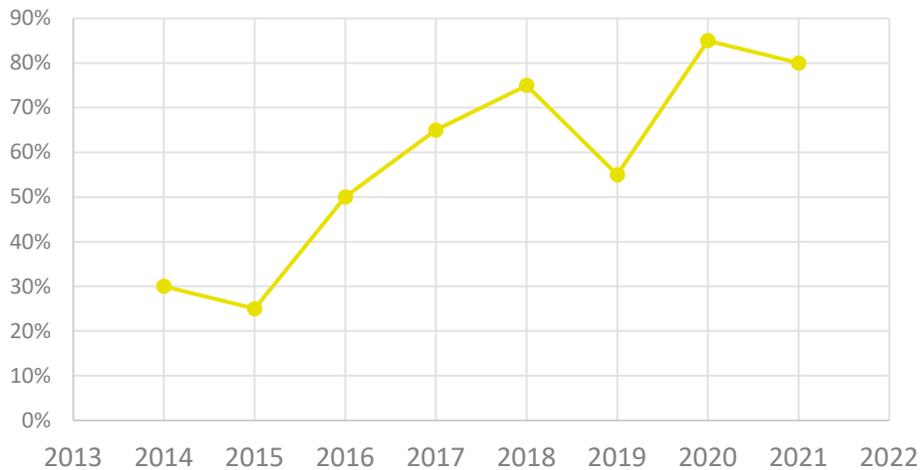
Amoxicillin



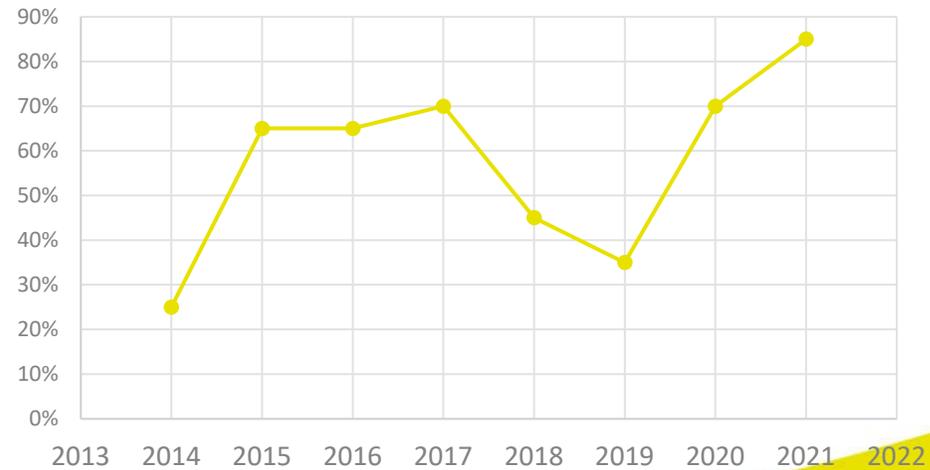
Colistine



Sulfonamides/Trimethoprim



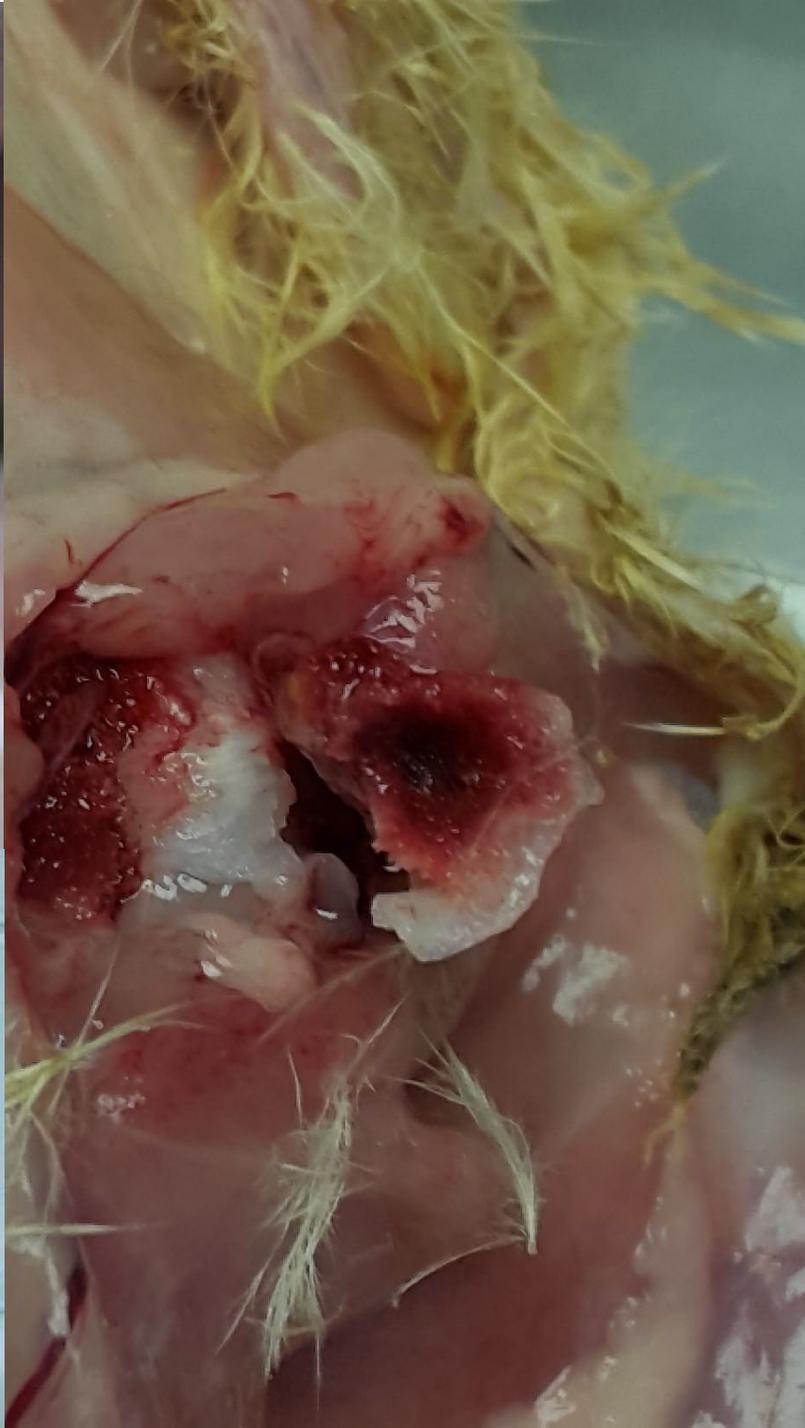
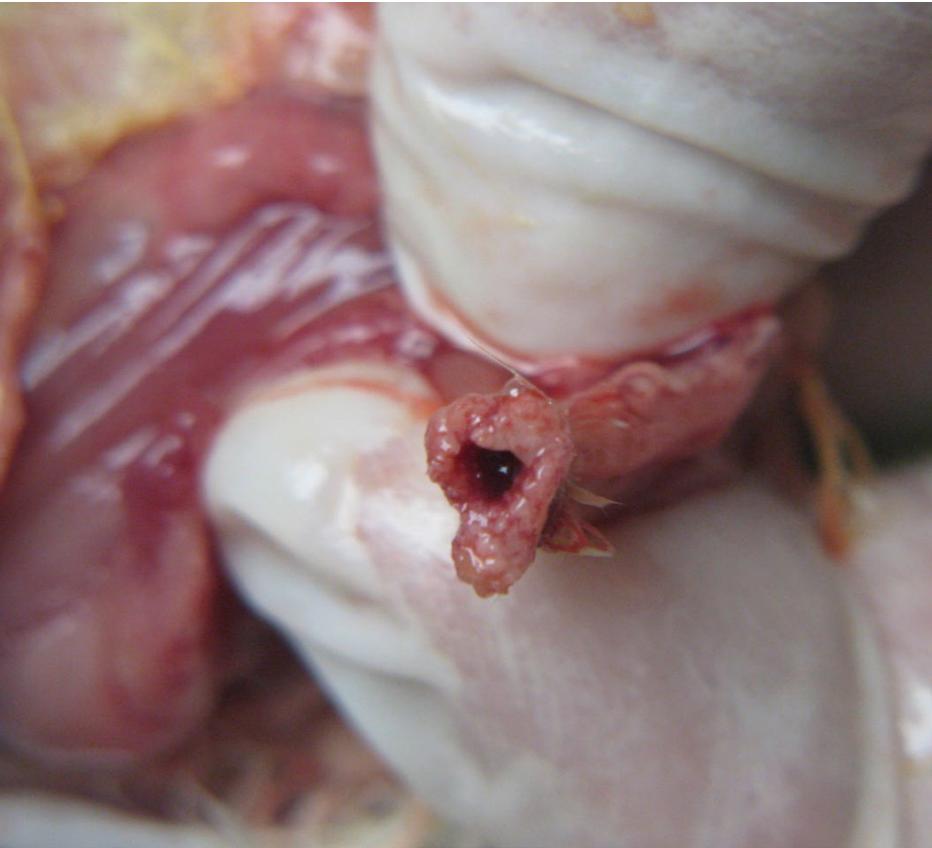
Enrofloxacin



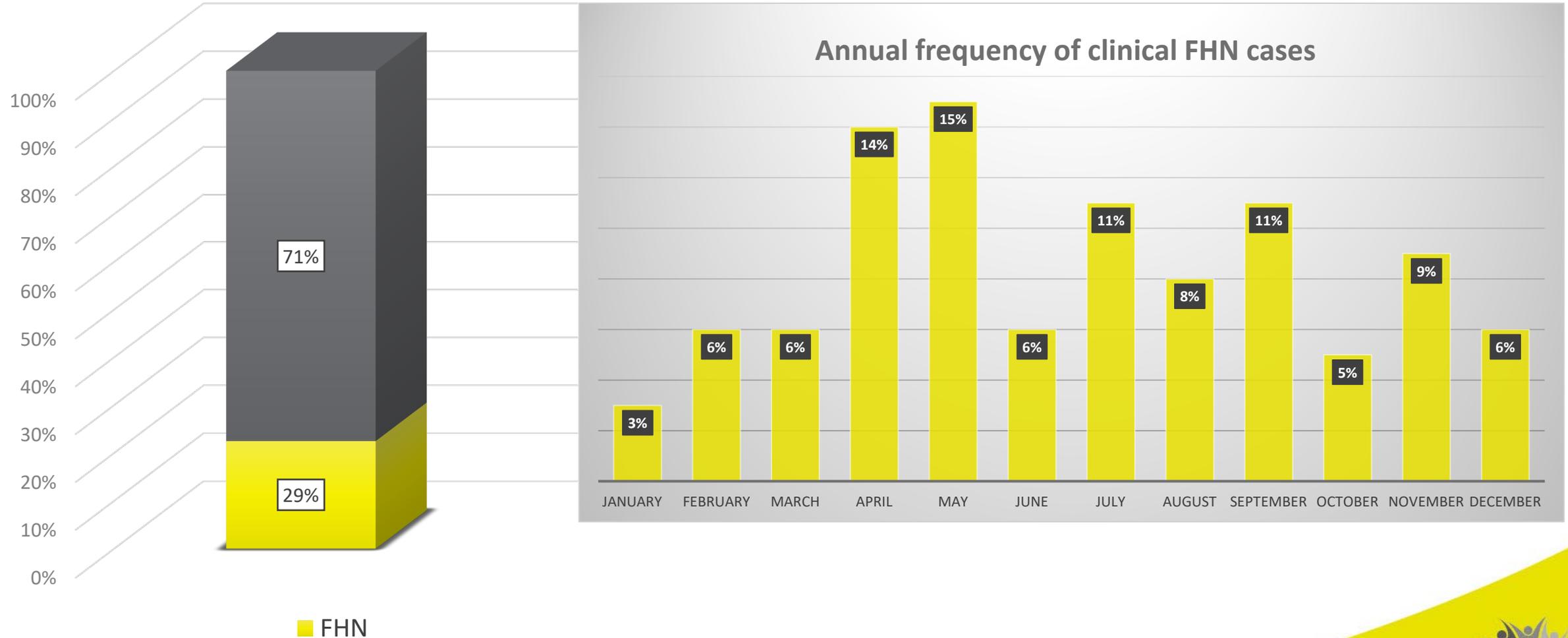
Enterococcus causes diverse infections

- Enterococcal spondylitis-ES
- Enterococcal vertebral osteoarthritis in chickens (EVOA)
- Femoral head necrosis (FHN)
- Spondylolisthesis (spondylolisthesis, slippage of the vertebrae, spondylolisthesis)
- Osteomyelitis of the spine (inflammation of the bones and bone marrow)
- Inflammation of the joints (arthritis)
- Endocarditis
- Egg yolk infections

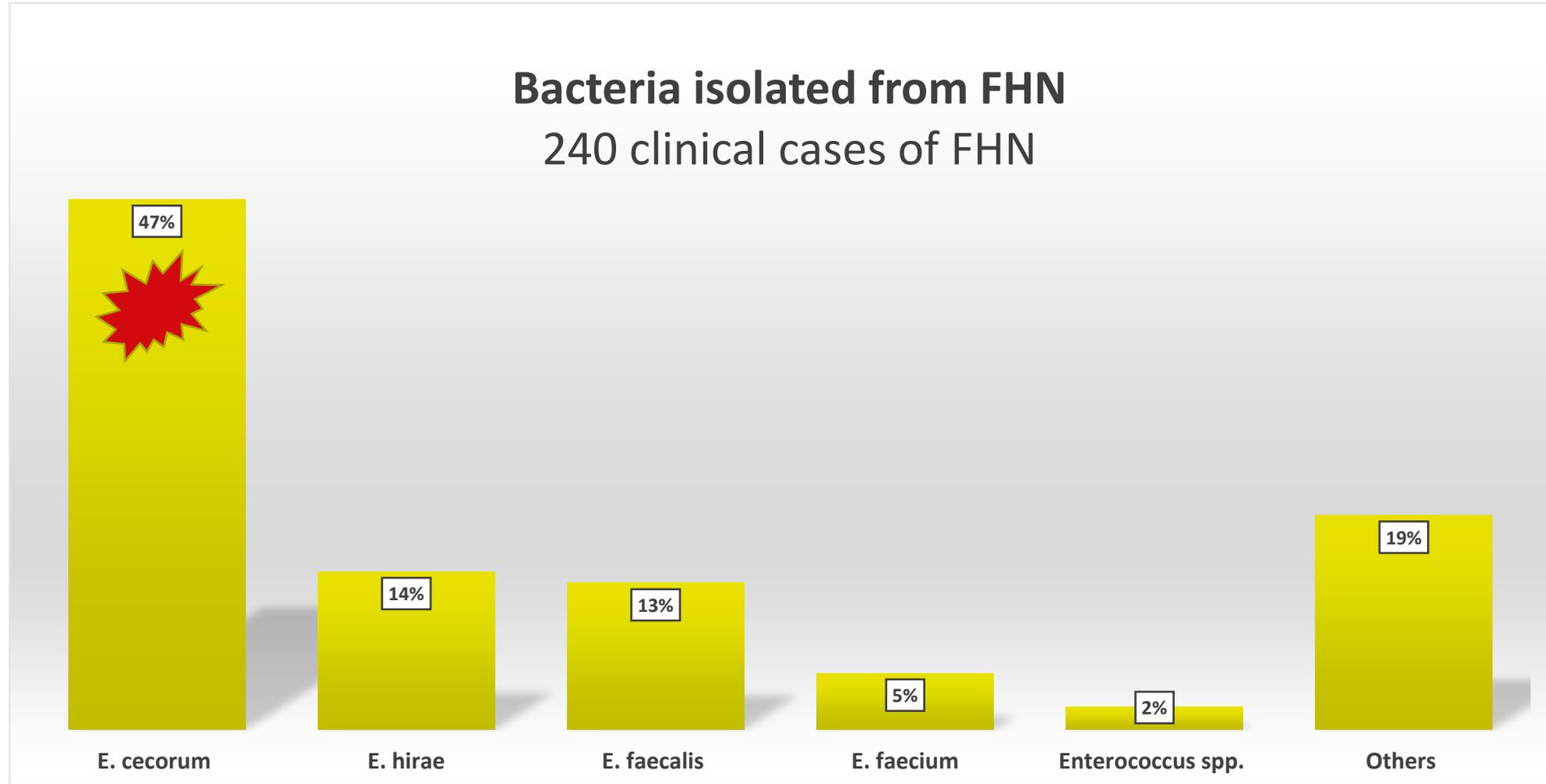




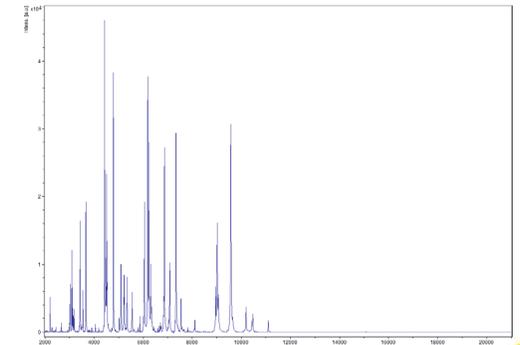
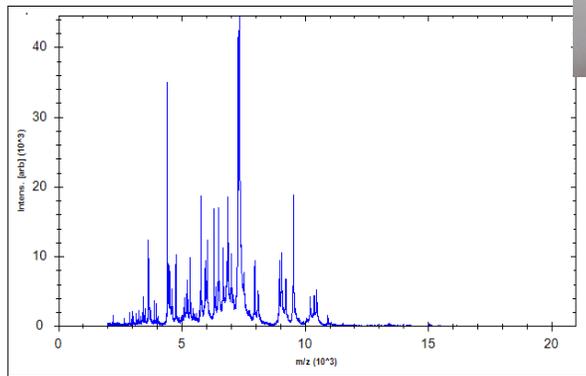
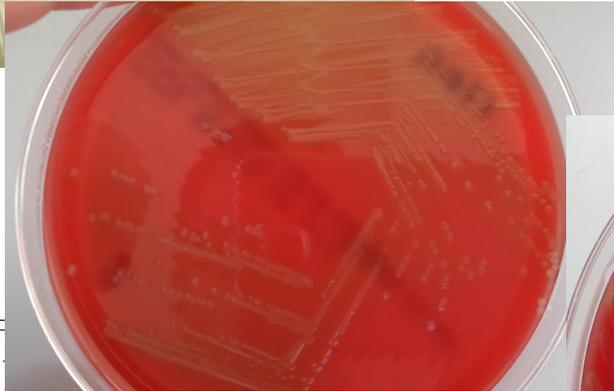
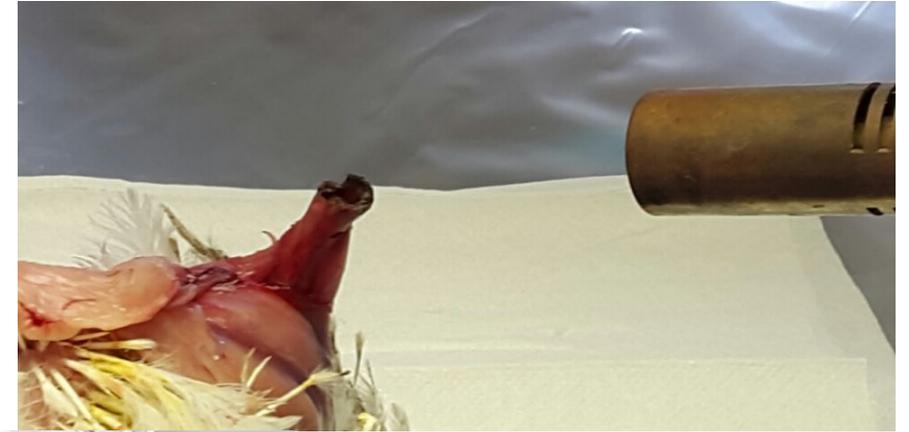
Femoral Head Necrosis

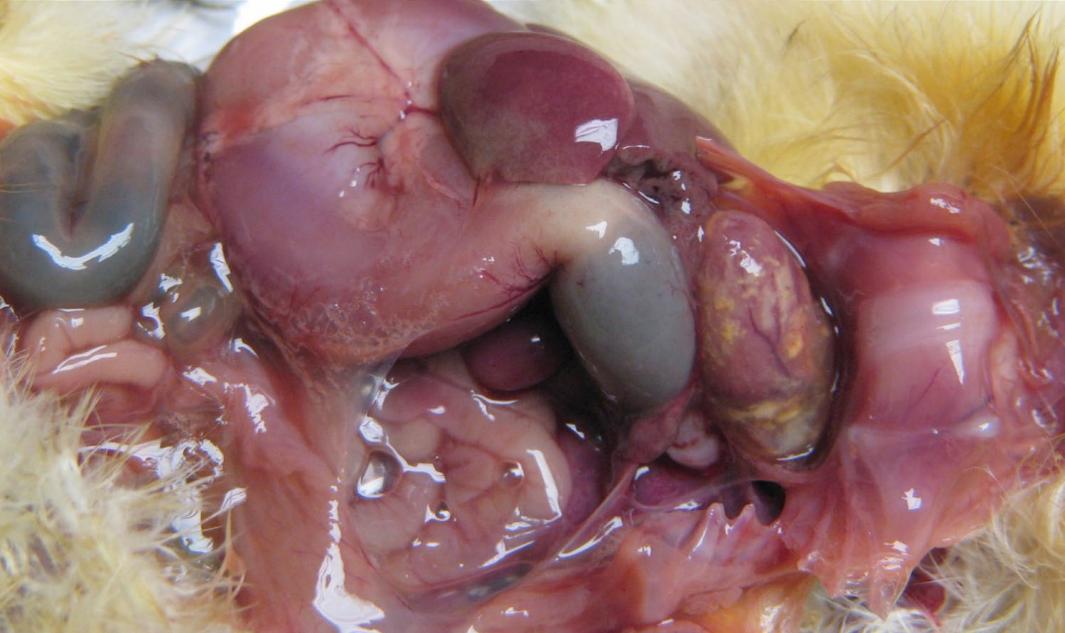
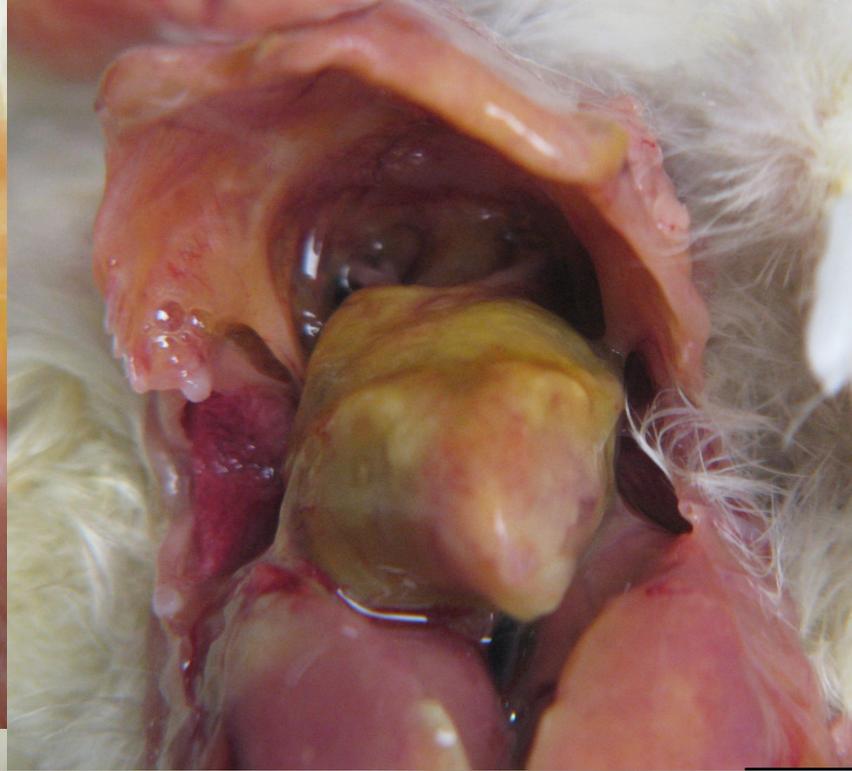
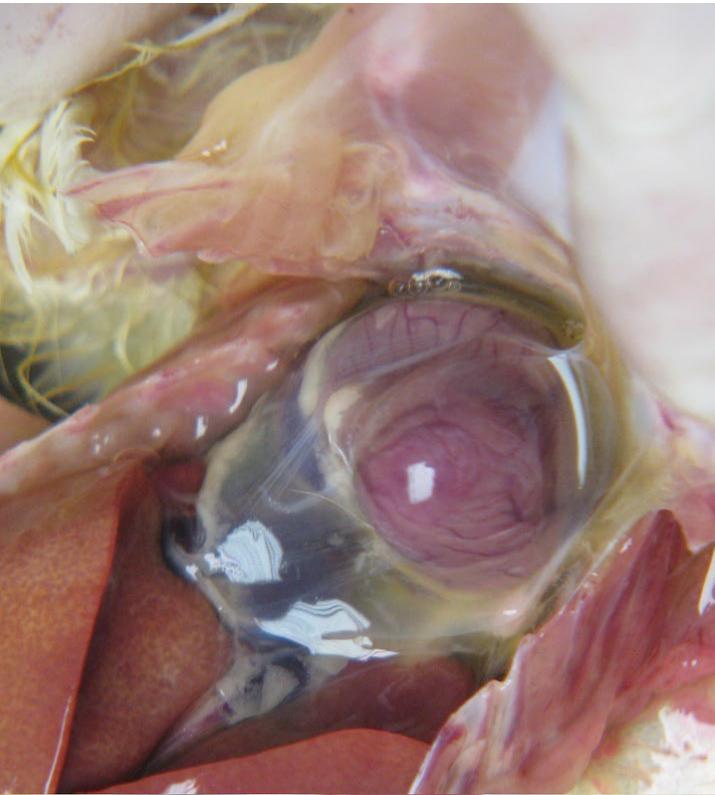


Different bacteria are involved in Femoral Head Necrosis

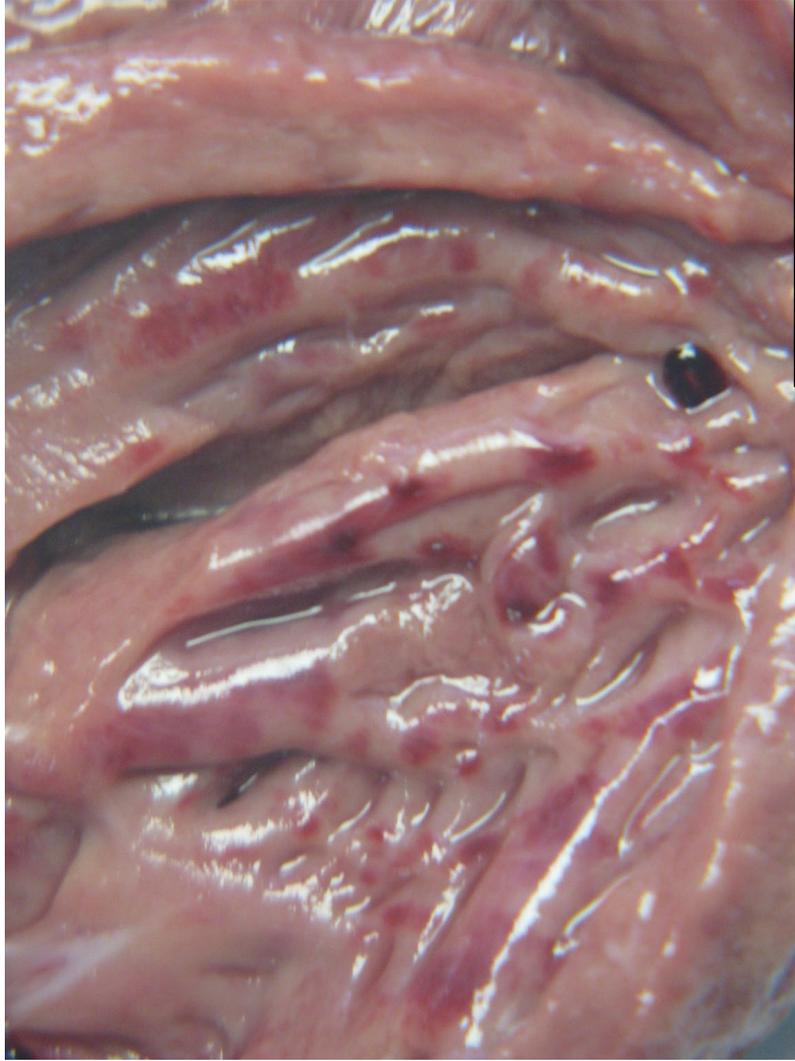


A correct diagnosis is very important

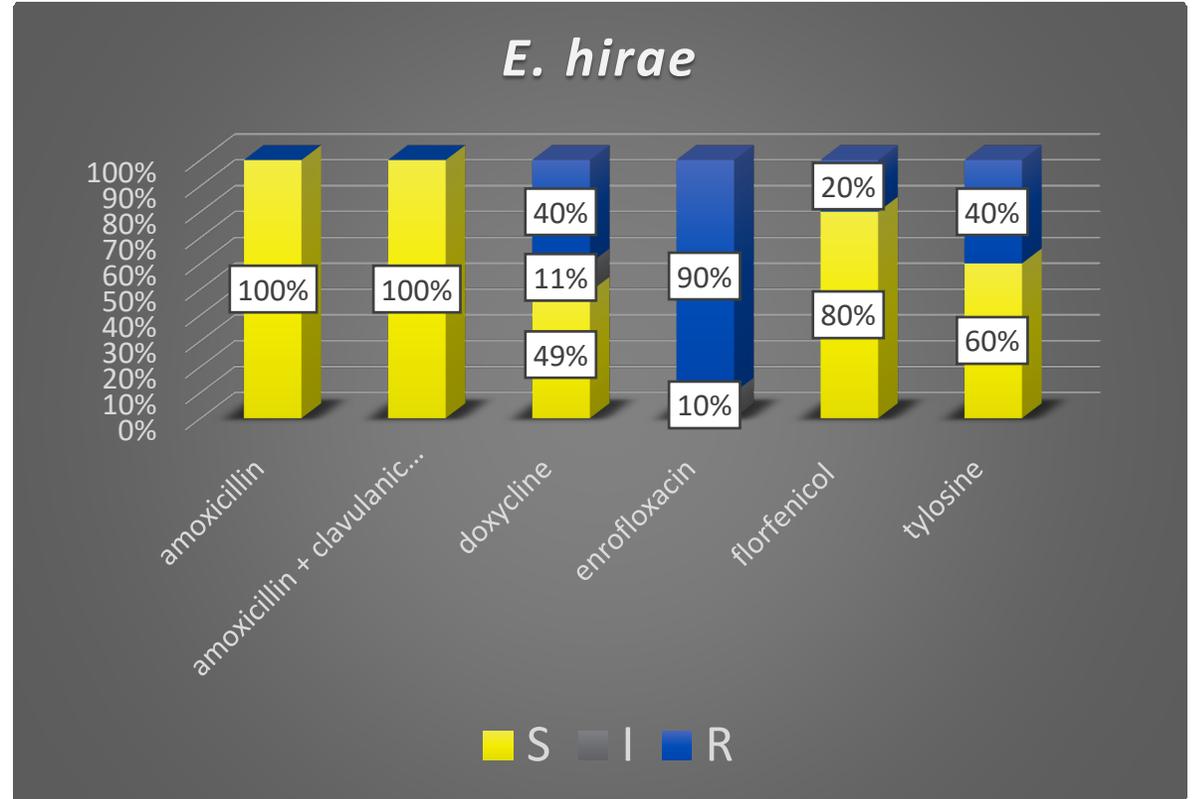
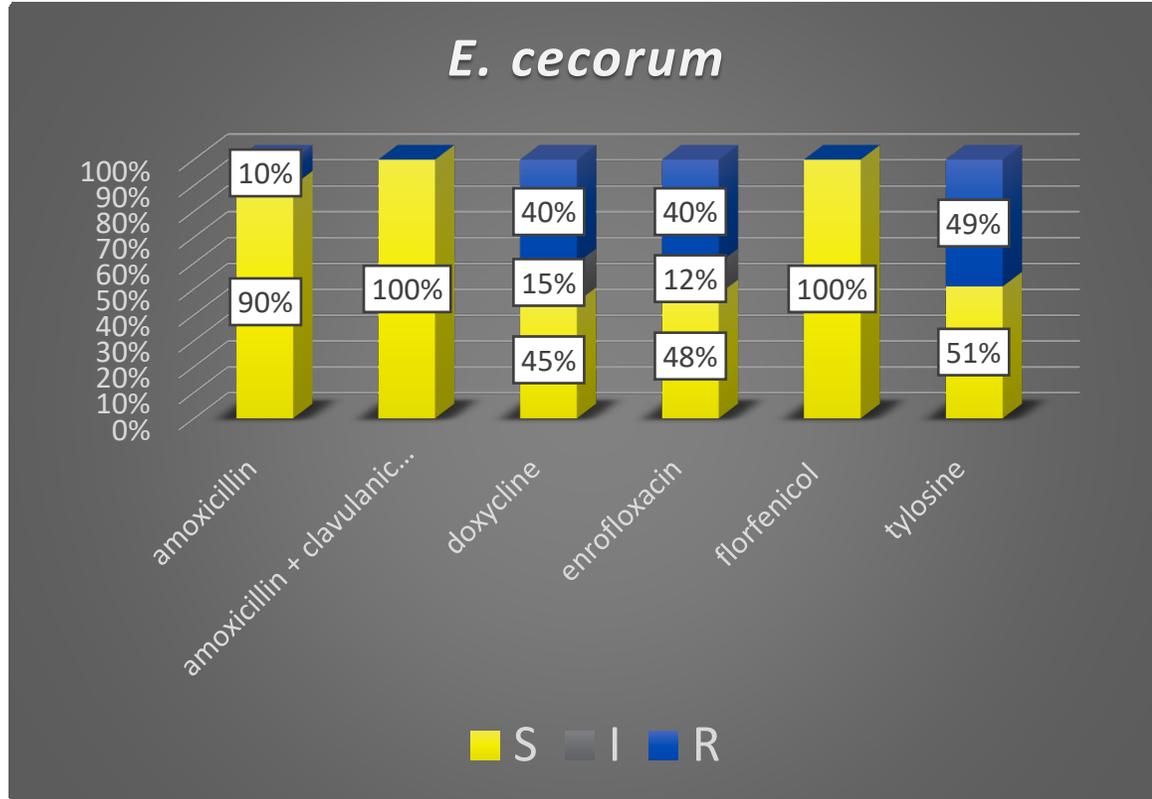






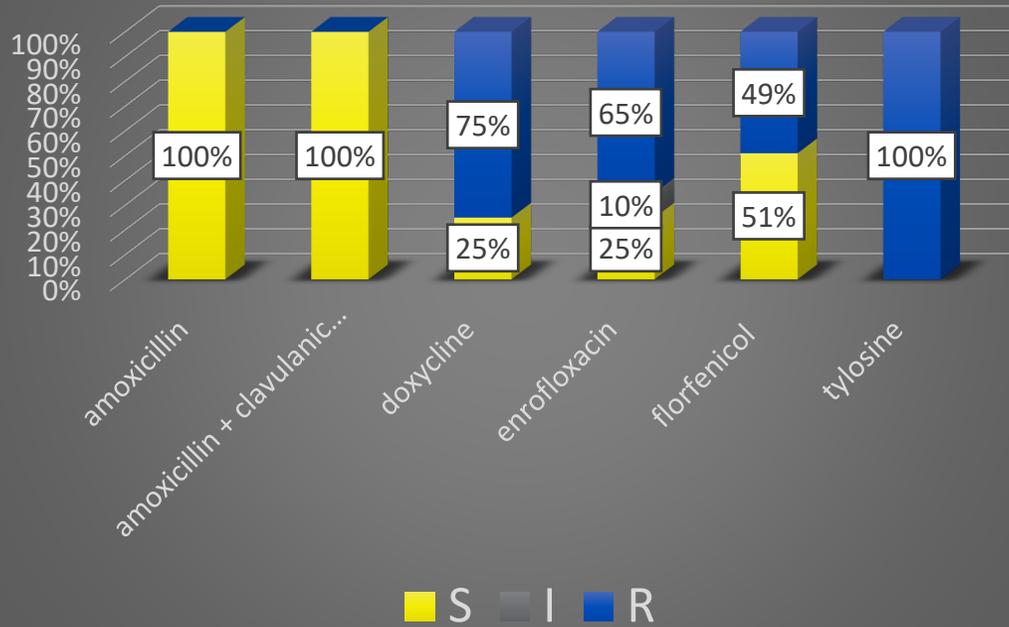


Enterococcus resistance

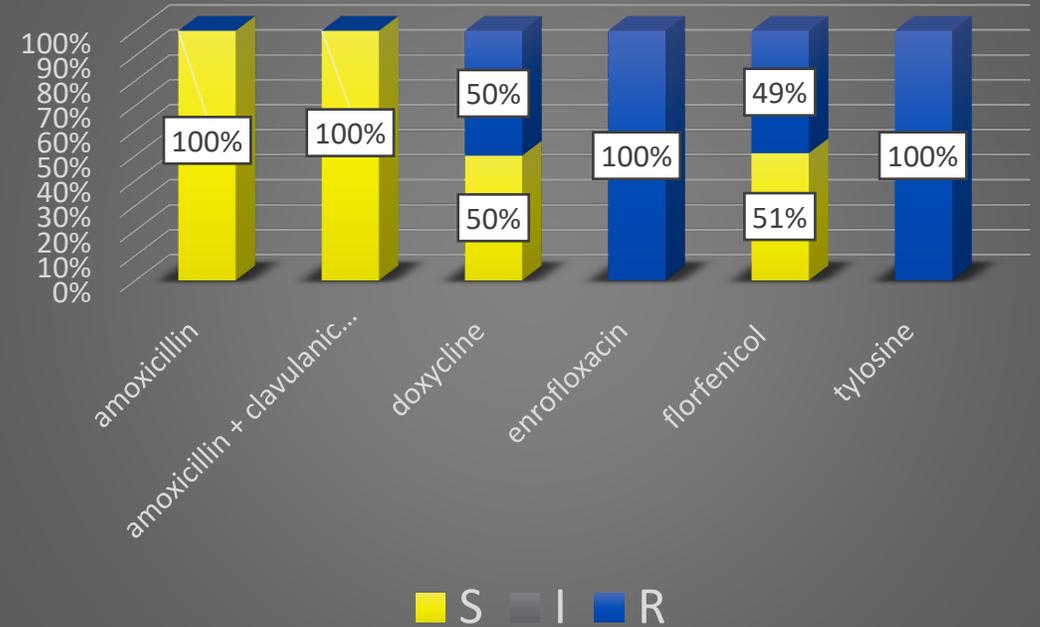


Enterococcus resistance

E. faecalis

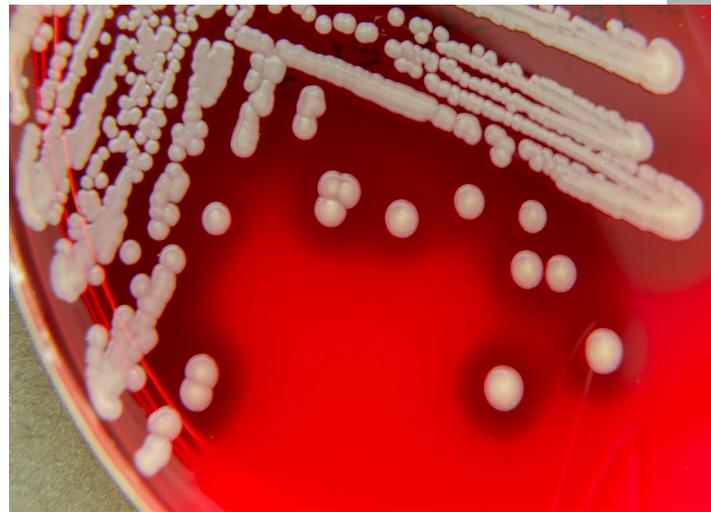


E. faecium

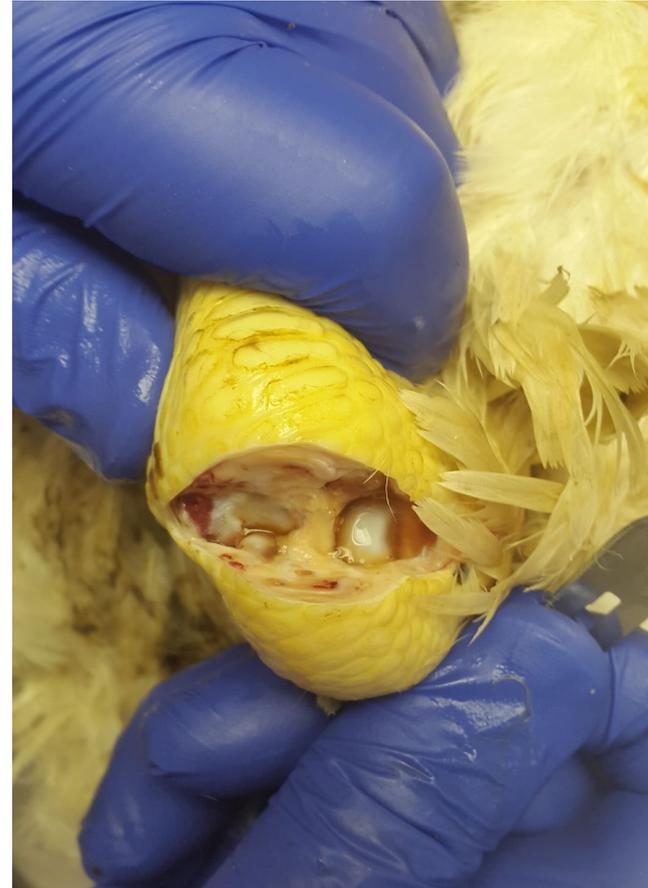


Staphylococcus infections

- S. aureus, CNS
- Infections around hatching
- Arthritis, Osteoarthritis
- Inflammation of the skin and subcutaneous tissue



Staphylococcus infections



Staphylococcus infections



Staphylococcus infections

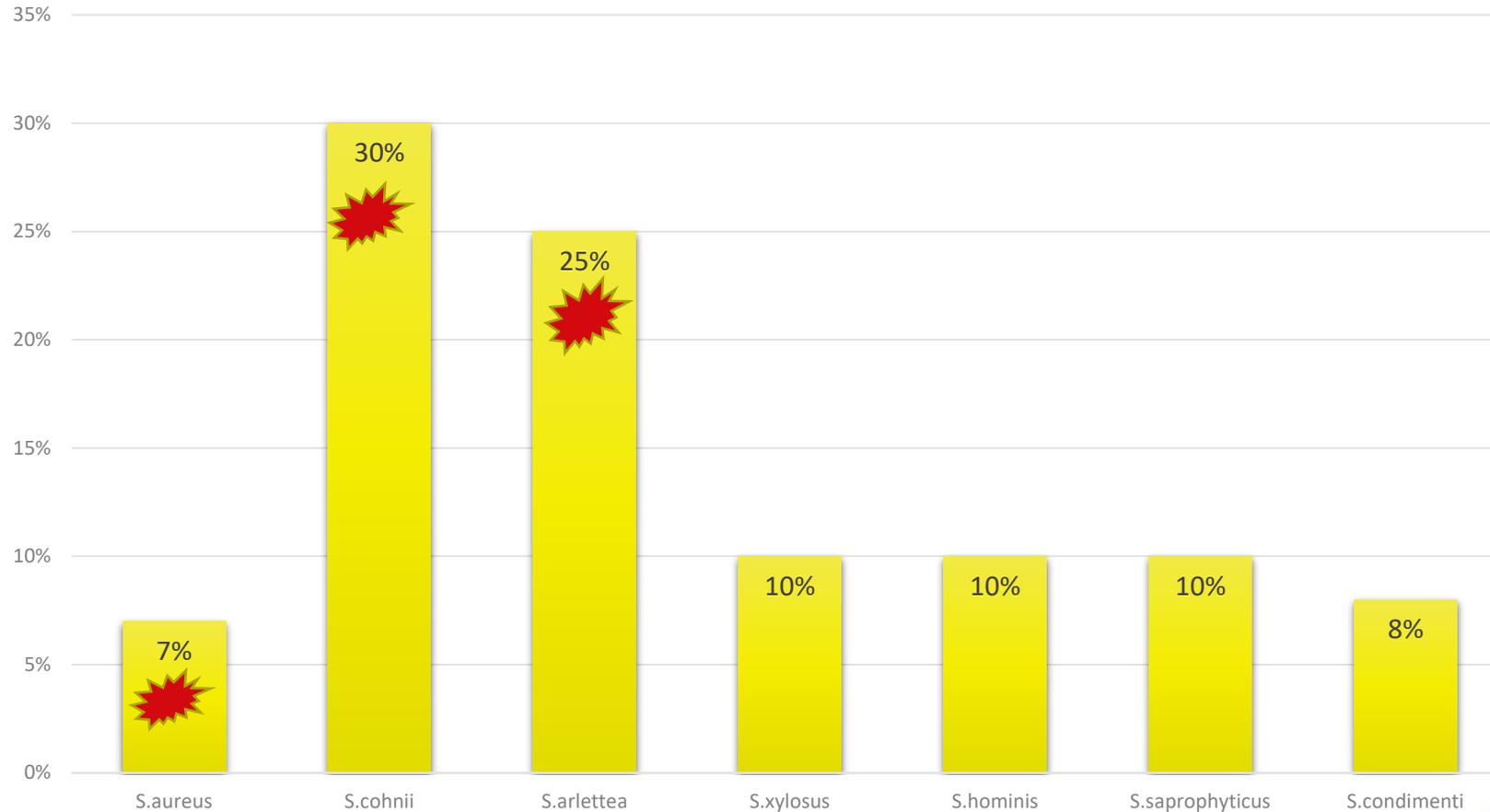


Staphylococcus infections



Staphylococci isolated from joint inflammation

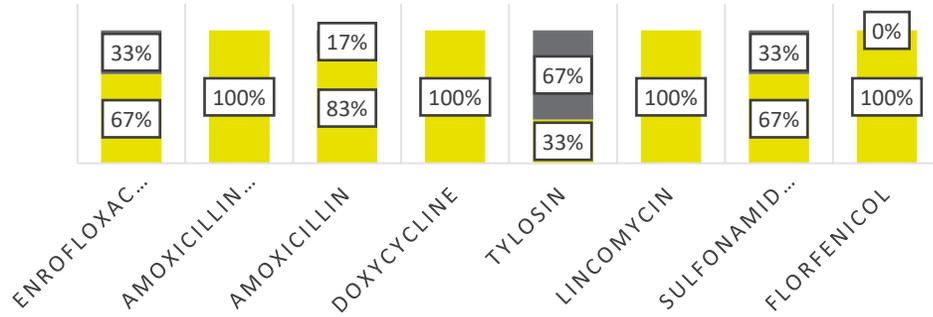
92 clinical cases of joint inflammation show different Staphylococci involved



Different Staphylococci show different resistances

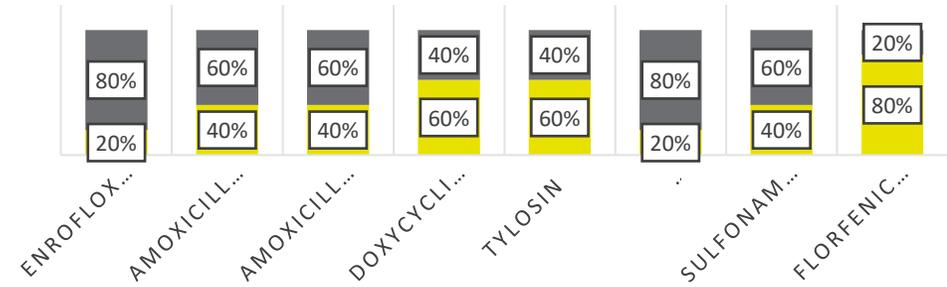
S. aureus

■ Sensitive ■ Resistance



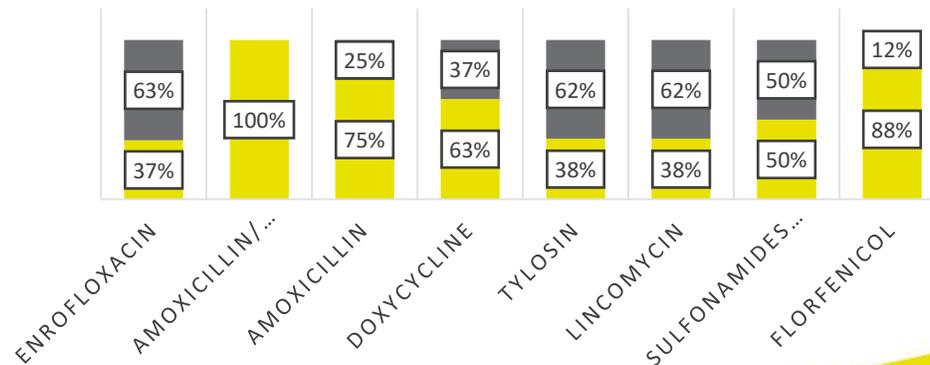
S. arlettae

■ Sensitive ■ Resistance



S. cohnii

■ Sensitive ■ Resistance



Questions & Answers

THANK YOU!