



Nadine Botteldoorn,
DGZ-MCC and ARSIA

Brussels, 20 June 2025



Antibiotic resistance in livestock: trends in cattle, pigs and poultry production in Belgium

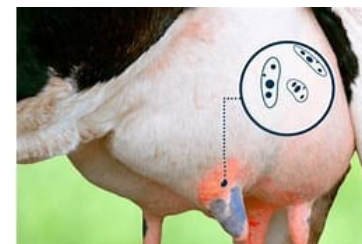
First-line laboratories in animal health

DGZ : Dierengezondheidszorg Vlaanderen

MCC : Melkcontrolecentrum Vlaanderen

ARSIA asbl : Association régionale de santé et d'identification animale





Results

Farmers

Veterinarians

Samples: feces, swabs, organs, blood and milk

Accompanied by a **request form** containing (detailed) information

Carcass

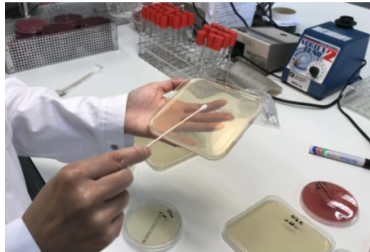
Necropsy

Bacteriology : Analysis of samples to identify specific pathogens in order to support diagnosis and guide appropriate treatment of the animals

- Diseased animals
- General health problems
- Clinical signs of illness
- Mortality within the herd
- Mastitis



➔ AMR

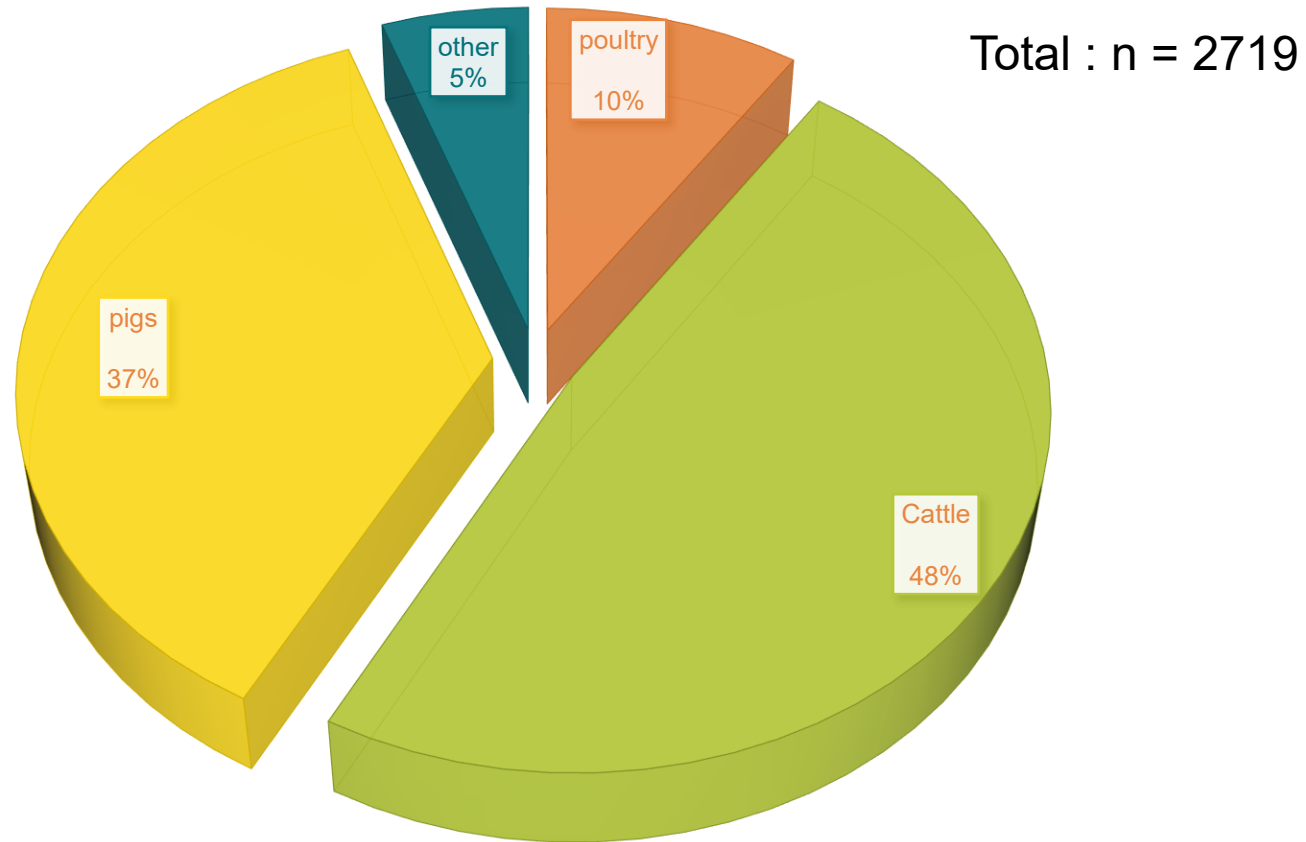


Methode

- Disk diffusion method
- Norm AFNOR UN 47-107
- Reference CA SFM vétérinaire
- Accreditation



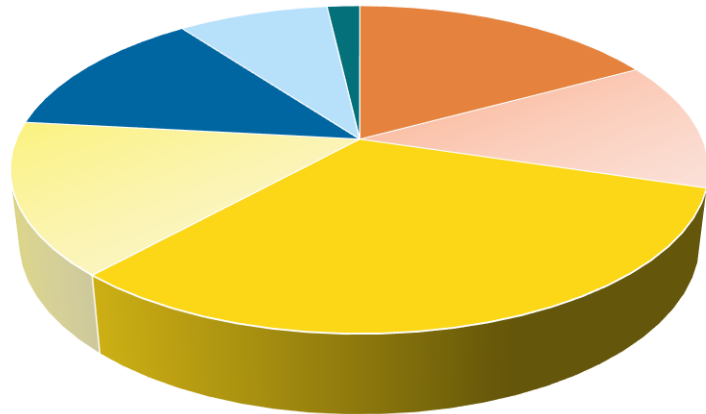
Number of performed antibiograms across different animal species



Number of performed antibiograms across different animal species

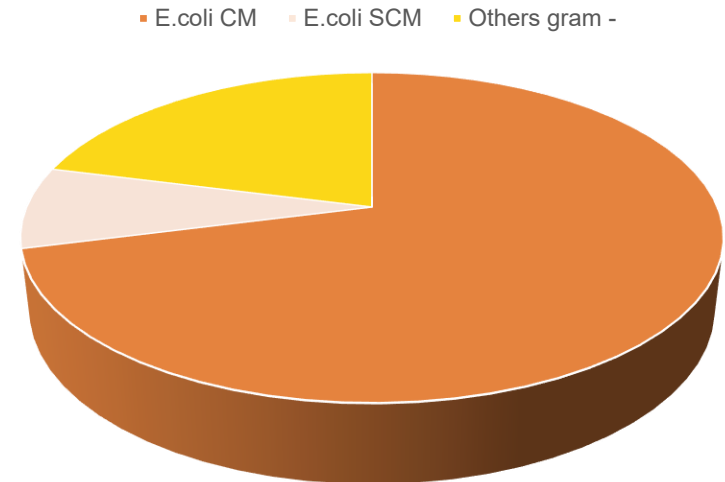
Total : n = 2234

Gram +



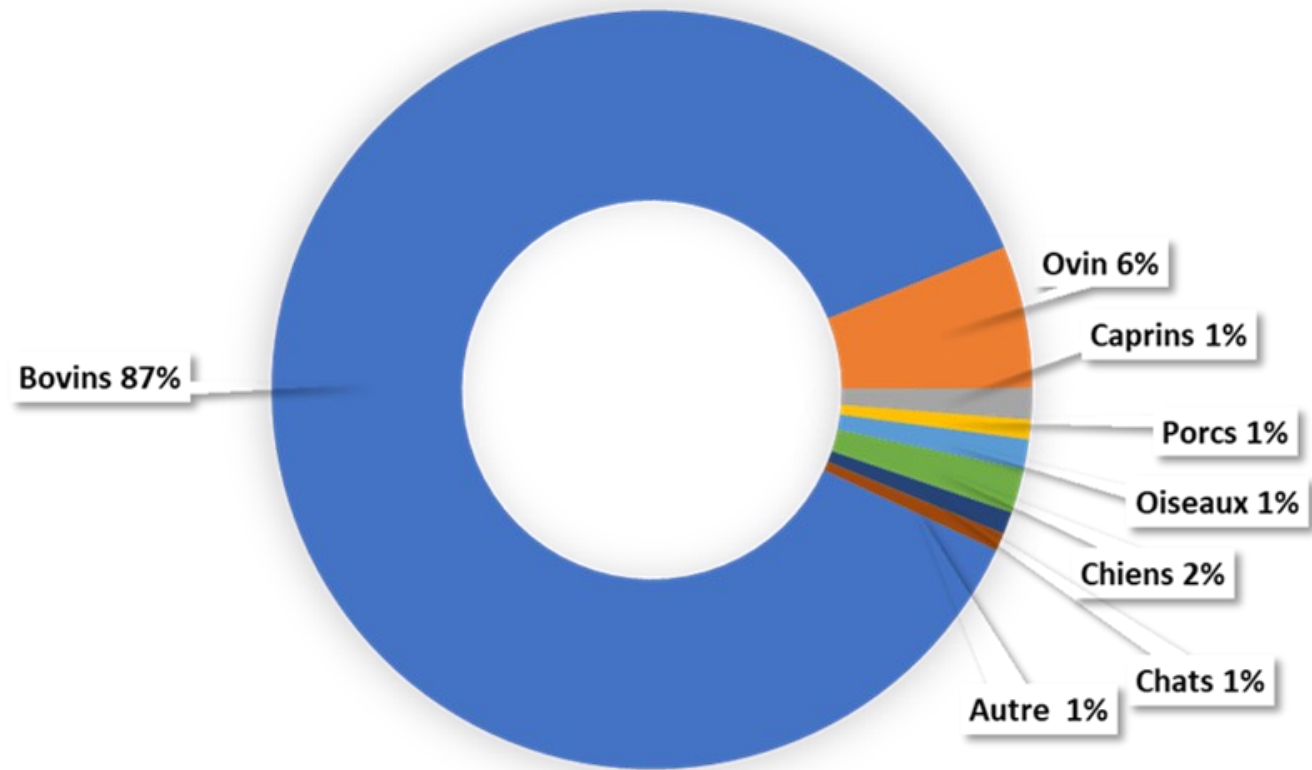
- Staphylococcus aureus CM
- Staphylococcus aureus SCM
- Streptococcus uberis CM
- Streptococcus uberis SCM
- Streptococcus dysgalactiae CM
- Streptococcus dysgalactiae SCM
- Streptococcus agalactiae CM

Gram -



- E.coli CM
- E.coli SCM
- Others gram -

Number of performed antibiograms across different animal species



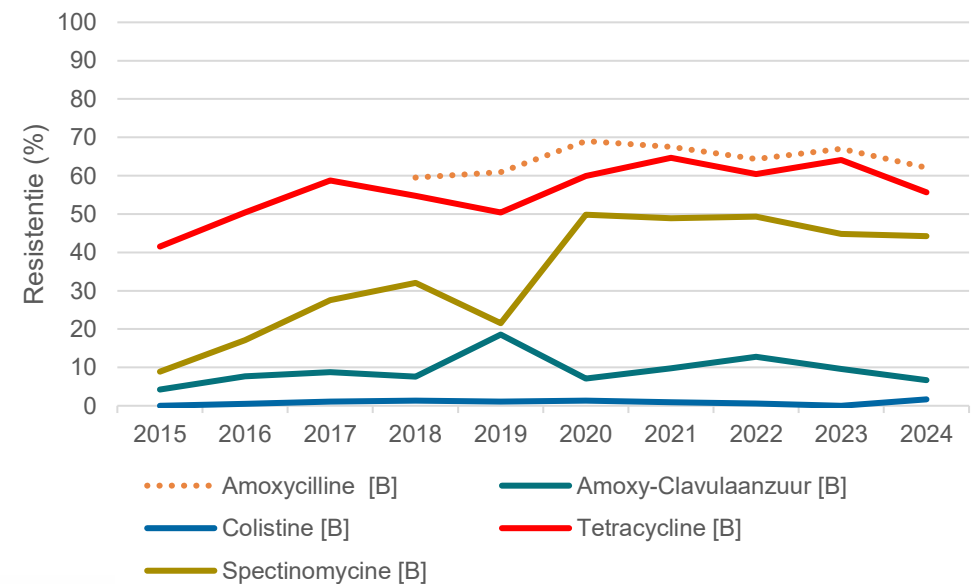
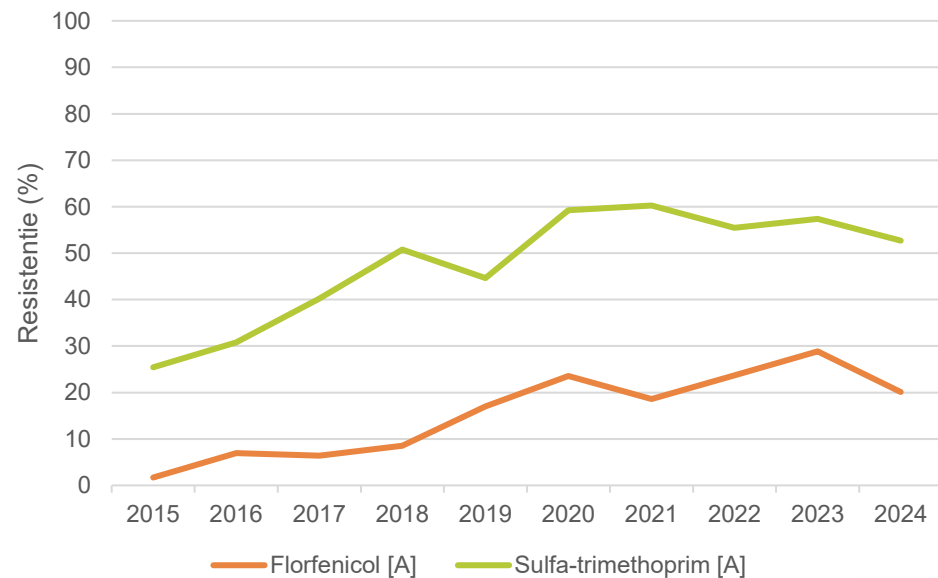


E. coli found in poultry

E. coli found in poultry



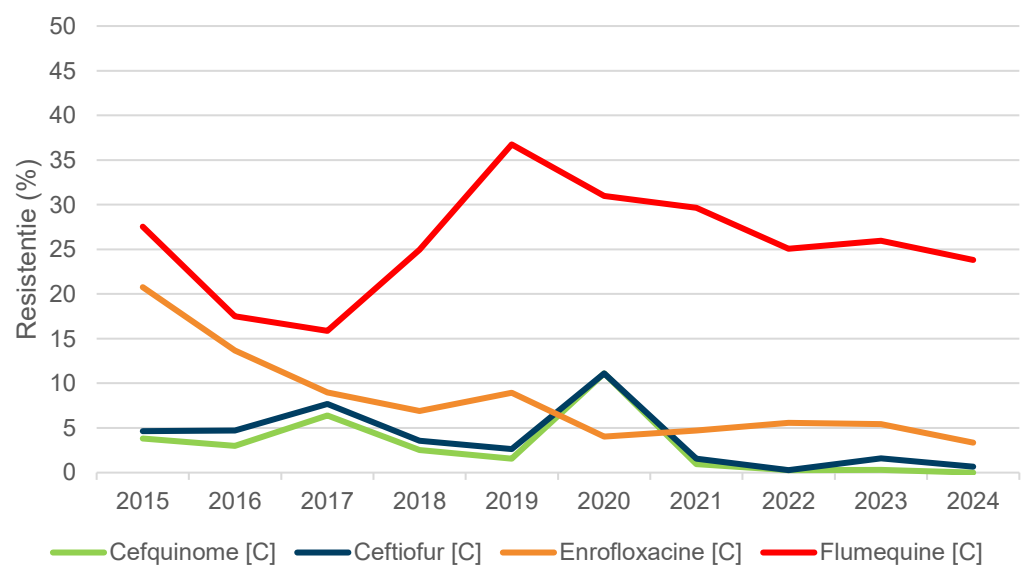
Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	236	234	378	449	381	297	371	359	312	298



E. coli found in poultry



Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	236	234	378	449	381	297	371	359	312	298



Conclusion

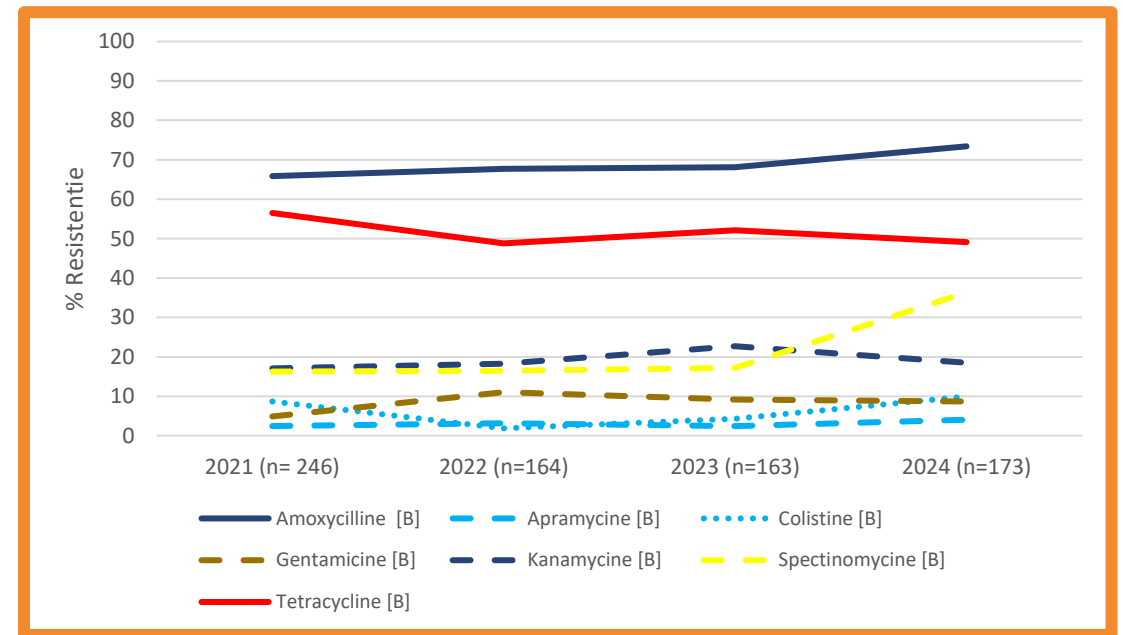
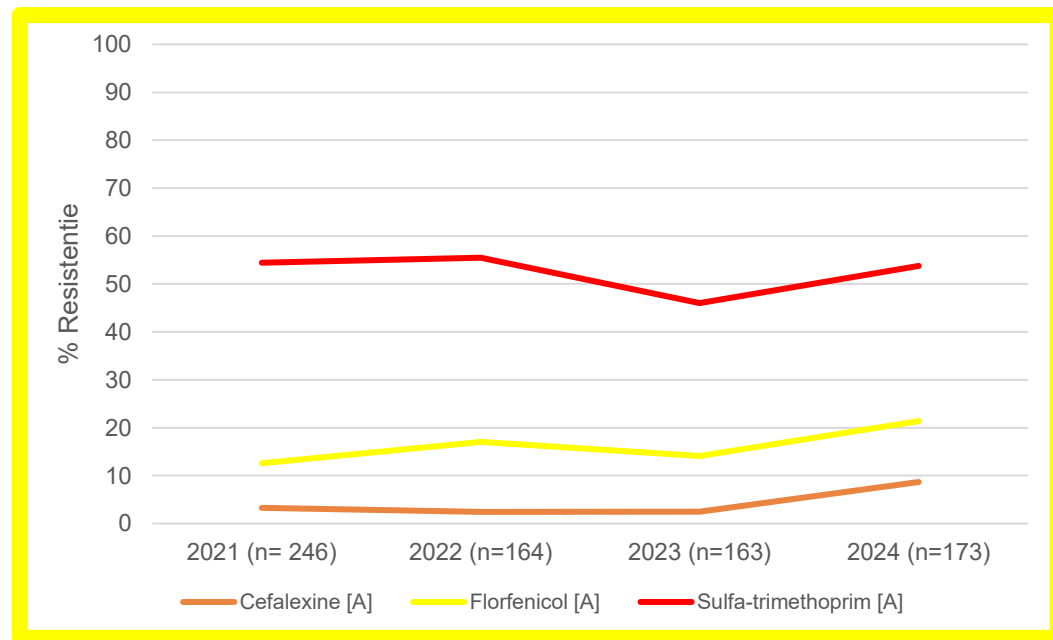
- Some antibiotics in classes A and B show high resistance, but this seems to be stabilizing
- Resistance to cephalosporins remains very low
- Fluoroquinolones show a clear downward trend in resistance





E. coli found in pig production

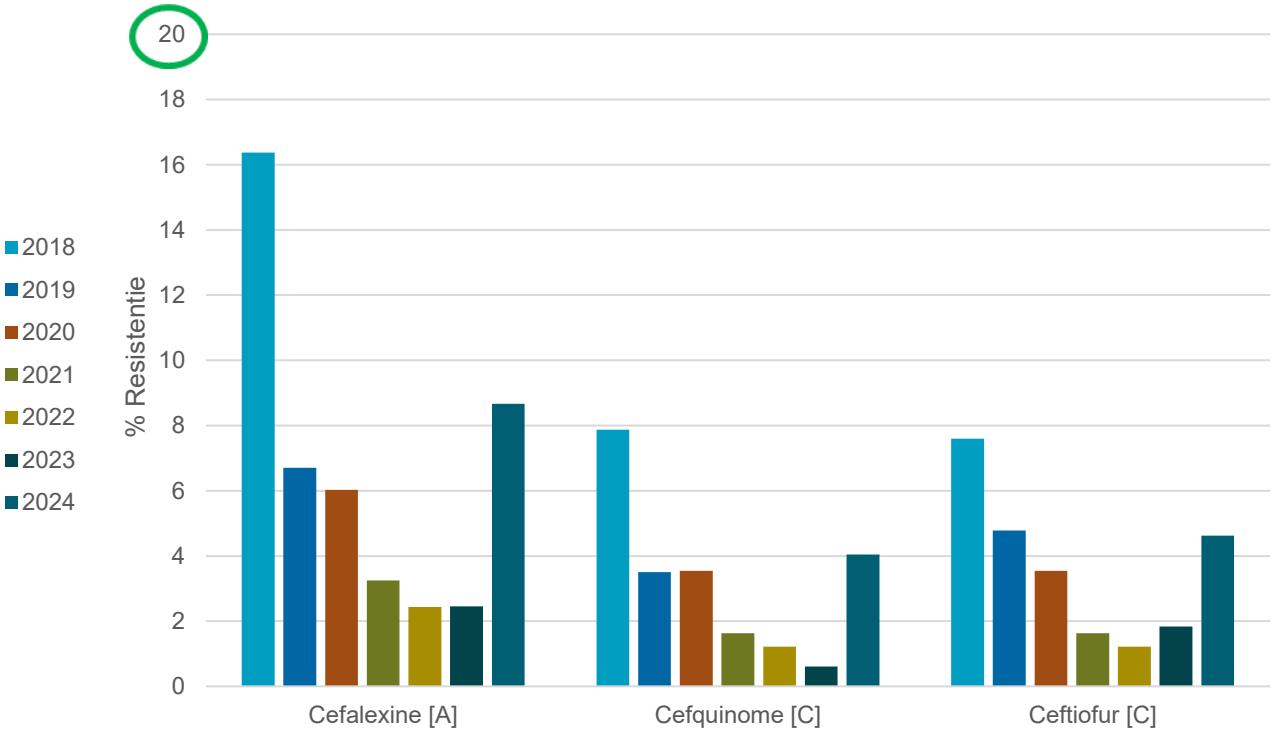
E. coli found in pig



E. coli found in pig : evolution of the resistance to cephalosporines

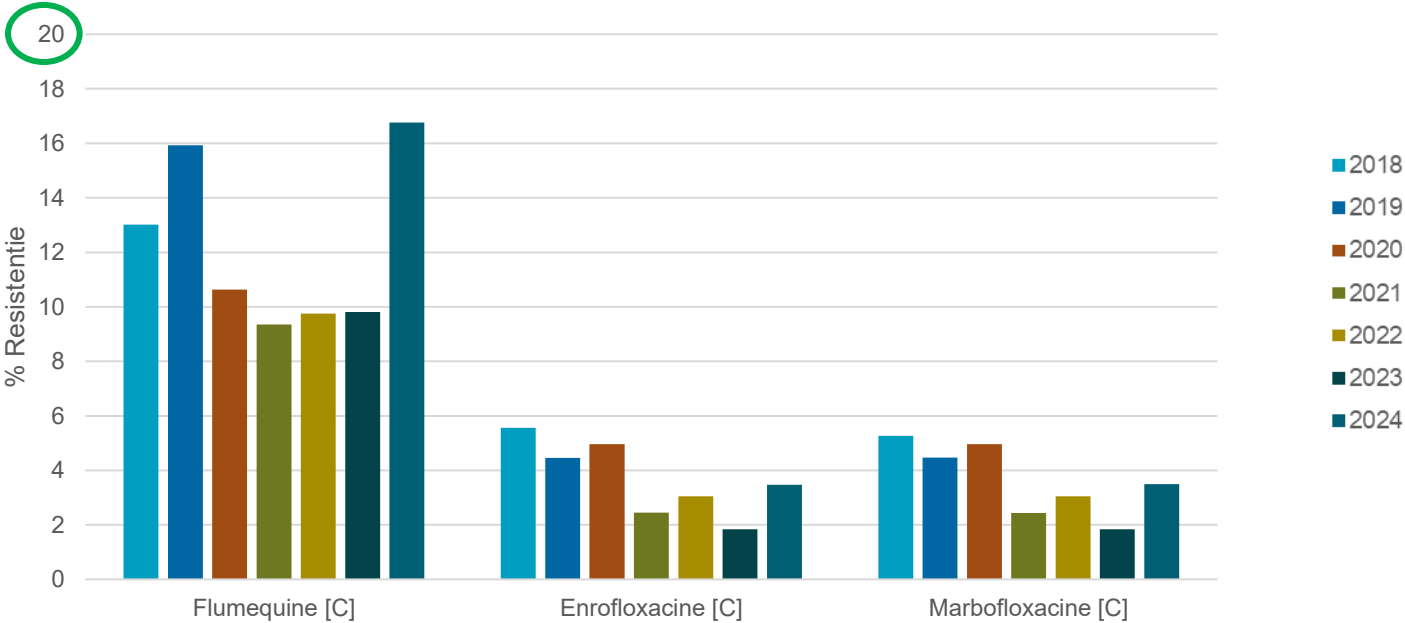


Year	2018	2019	2020	2021	2022	2023	2024
N	342	314	282	246	164	163	173

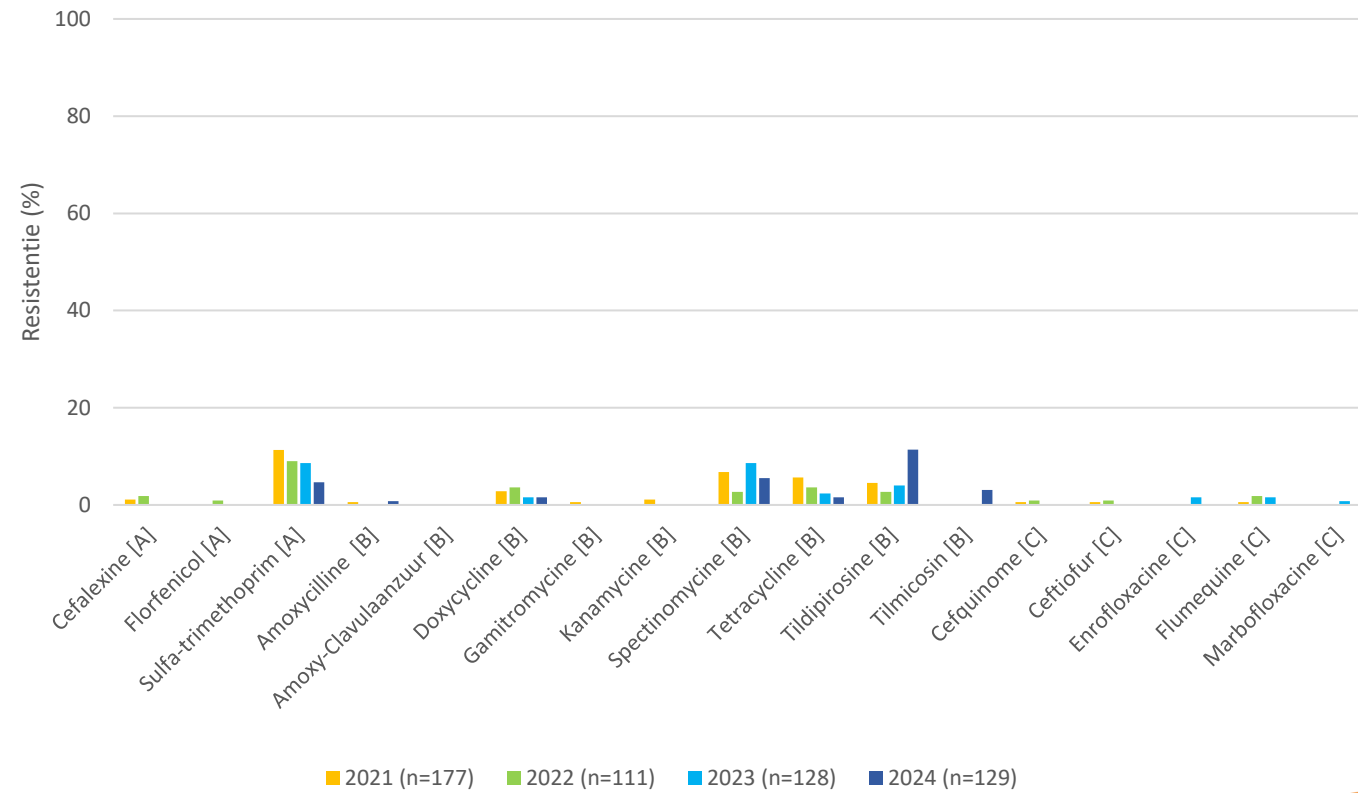


E. coli found in pig : evolution of the resistance to quinolones-fluoroquinolones

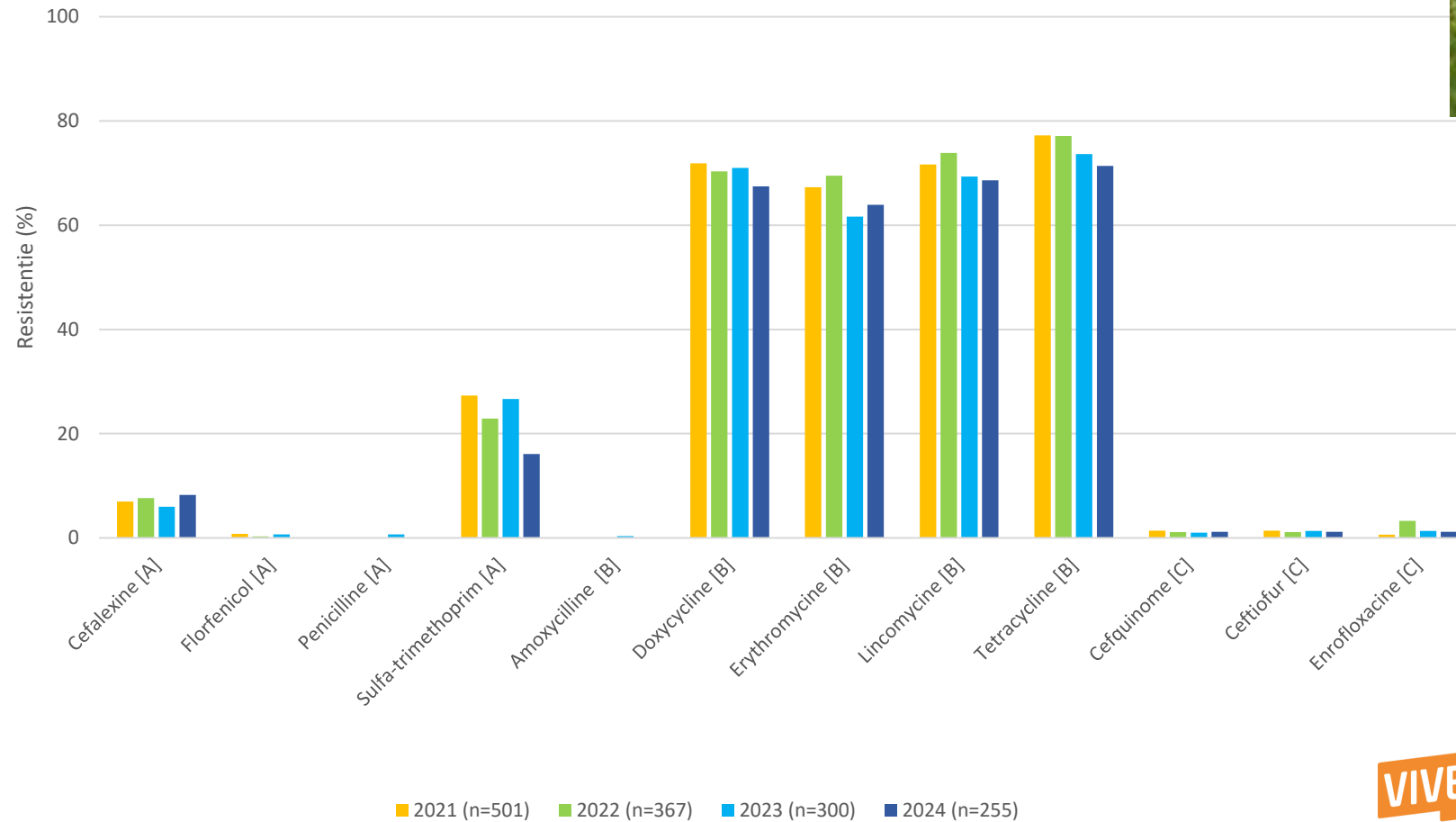
Year	2018	2019	2020	2021	2022	2023	2024
N	342	314	282	246	164	163	173



P. Multocida found in pig



S. suis found in pig



Conclusion

- Some class A and B antibiotics show a high degree of resistance ($> 50\%$), which can lead to treatment failure. In 2024 there was a trend of increasing resistance
- Cephalosporins have resistance rates below 5%, but an increase was observed in 2024
- Quinolone resistance also increased last year, exceeding 15%
- Fluoroquinolone resistance remains low ($< 5\%$), but there was a rising trend last year
- Respiratory pathogens in general show low stable resistance over the last years
- *Streptococcus suis* remains susceptible to penicillin

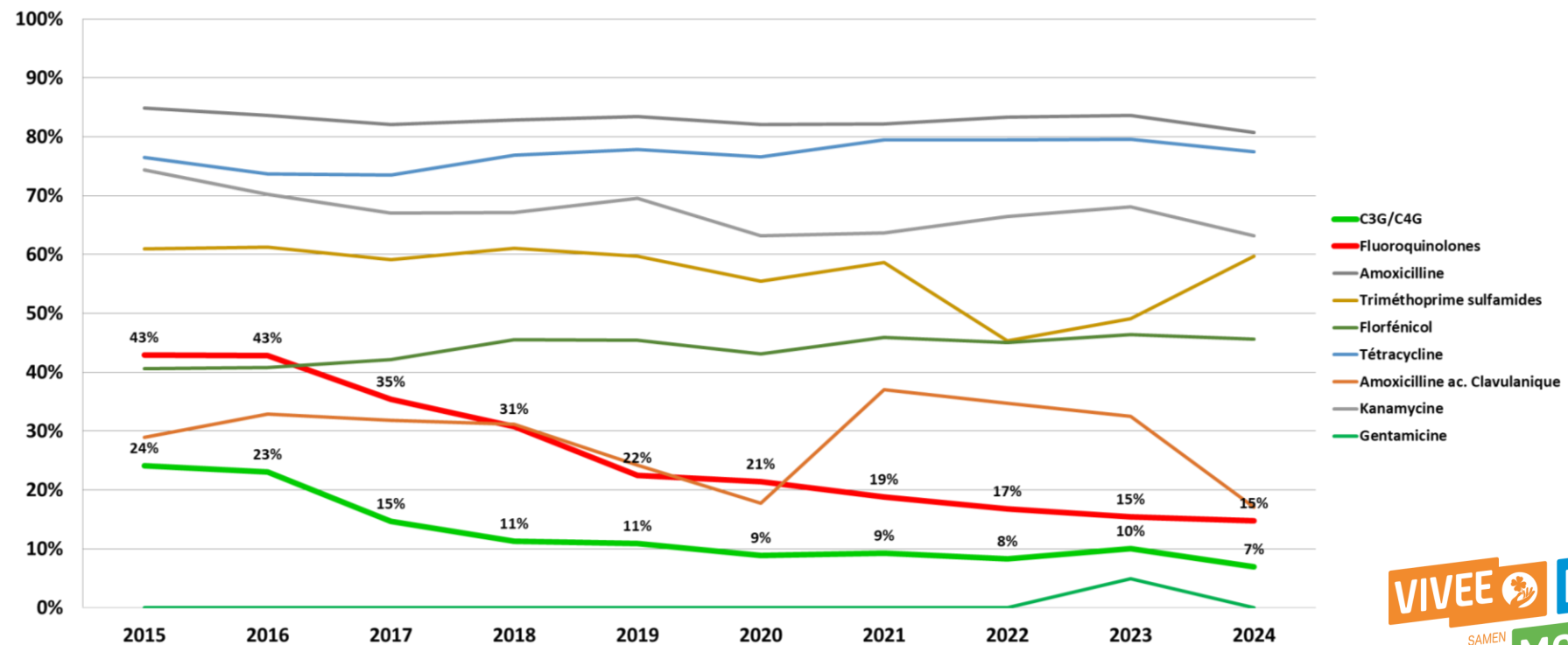




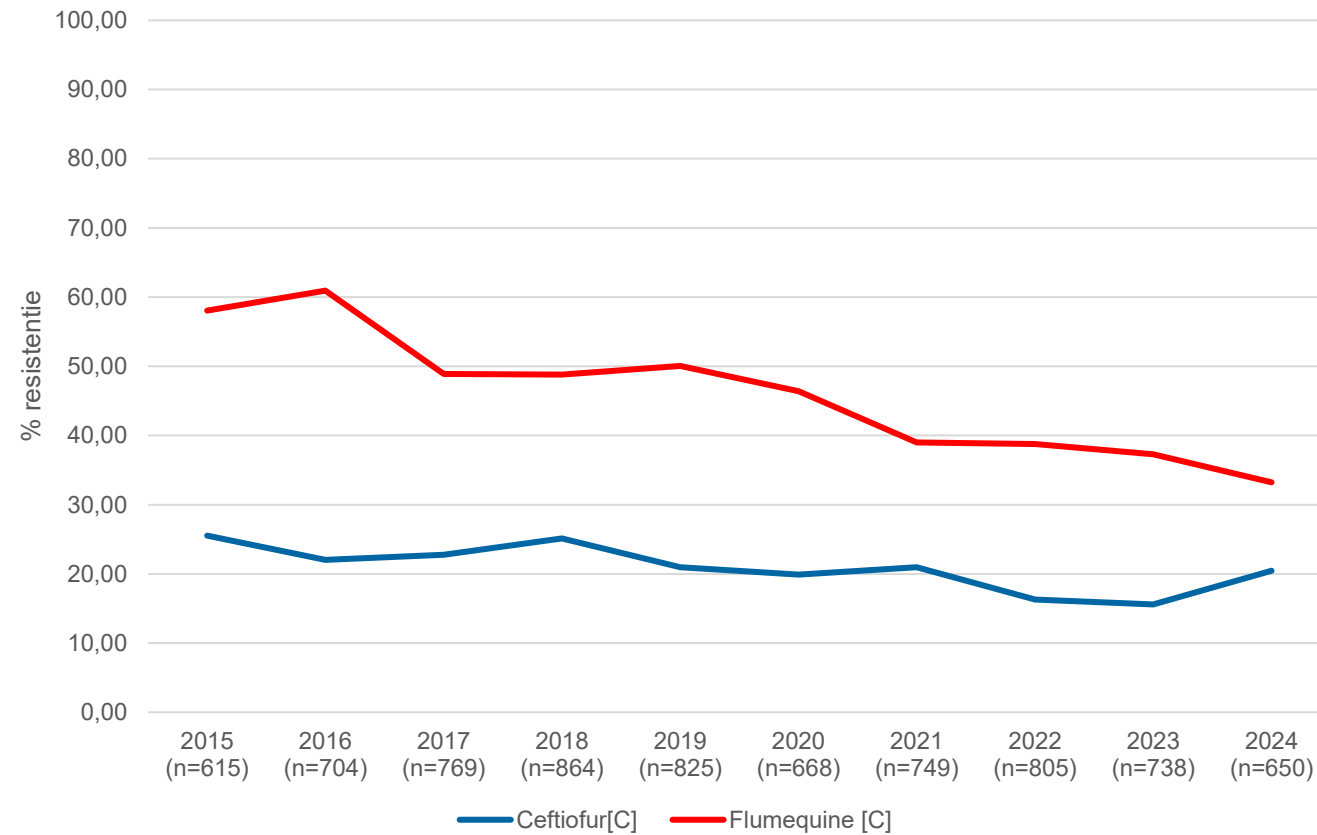
E. coli found in cattle

E. coli found in cattle

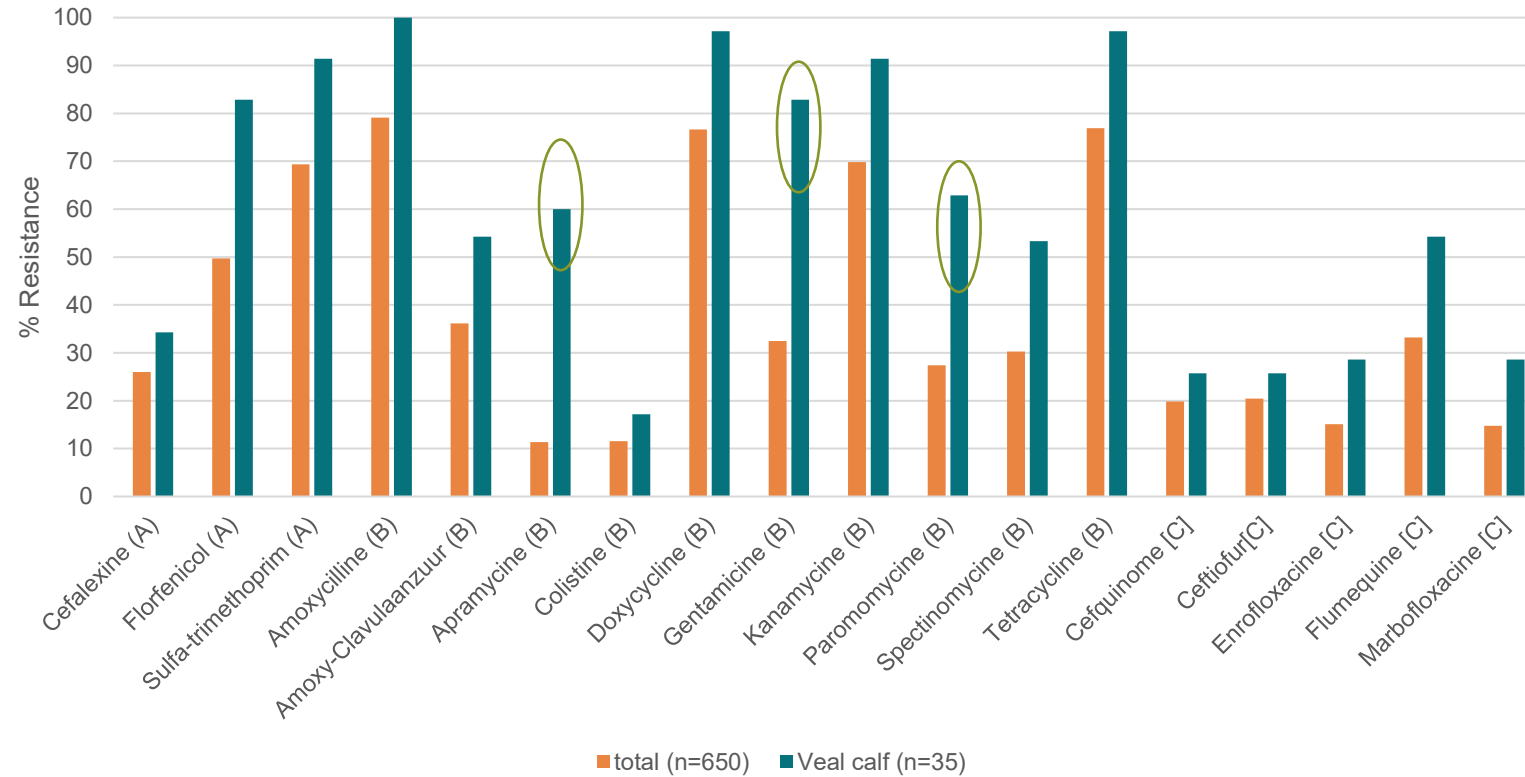
Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	828	1948	2567	2318	2018	1358	1351	1211	1071	1004



E. coli found in cattle: evolution of the resistance to ceftiofur and flumequine

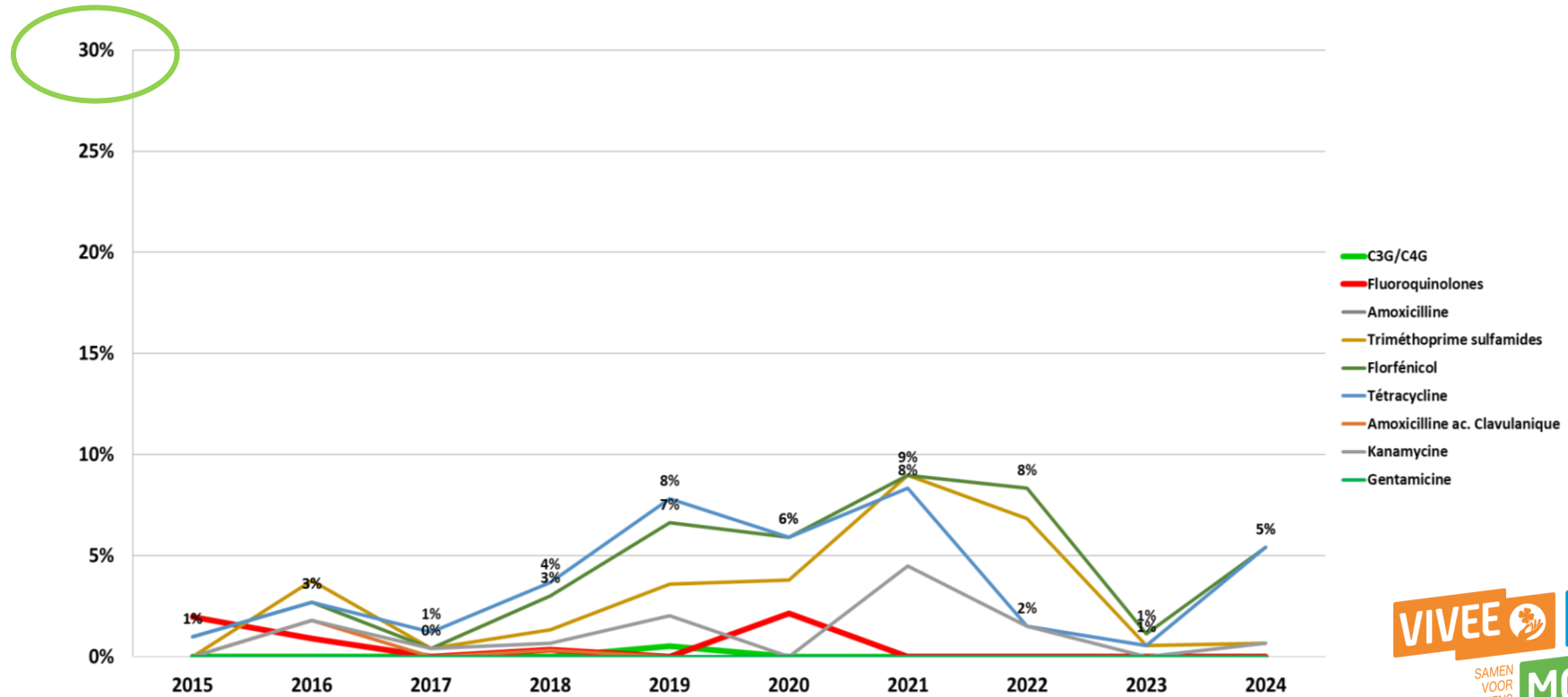


E. coli in cattle/veal calf



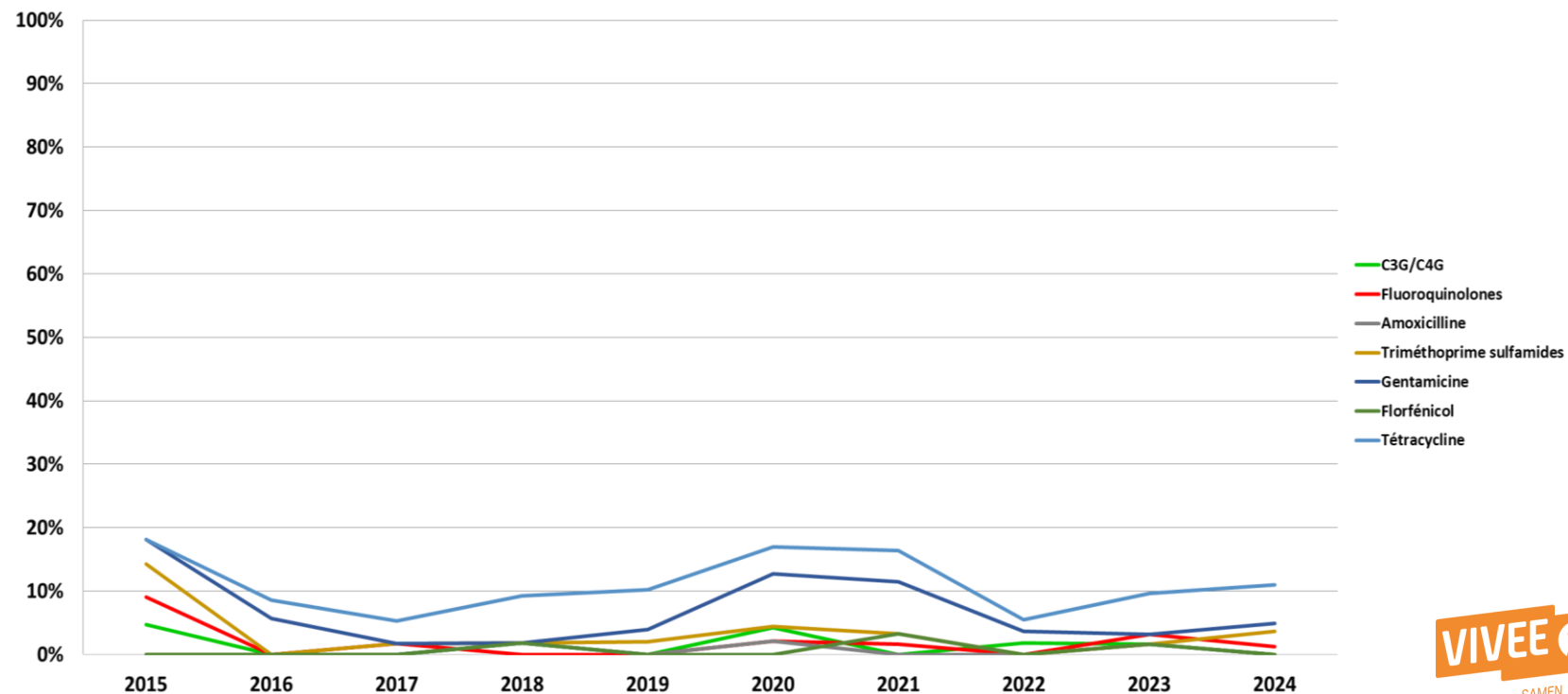
Salmonella Dublin in cattle

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	109	124	261	322	205	196	156	132	178	148



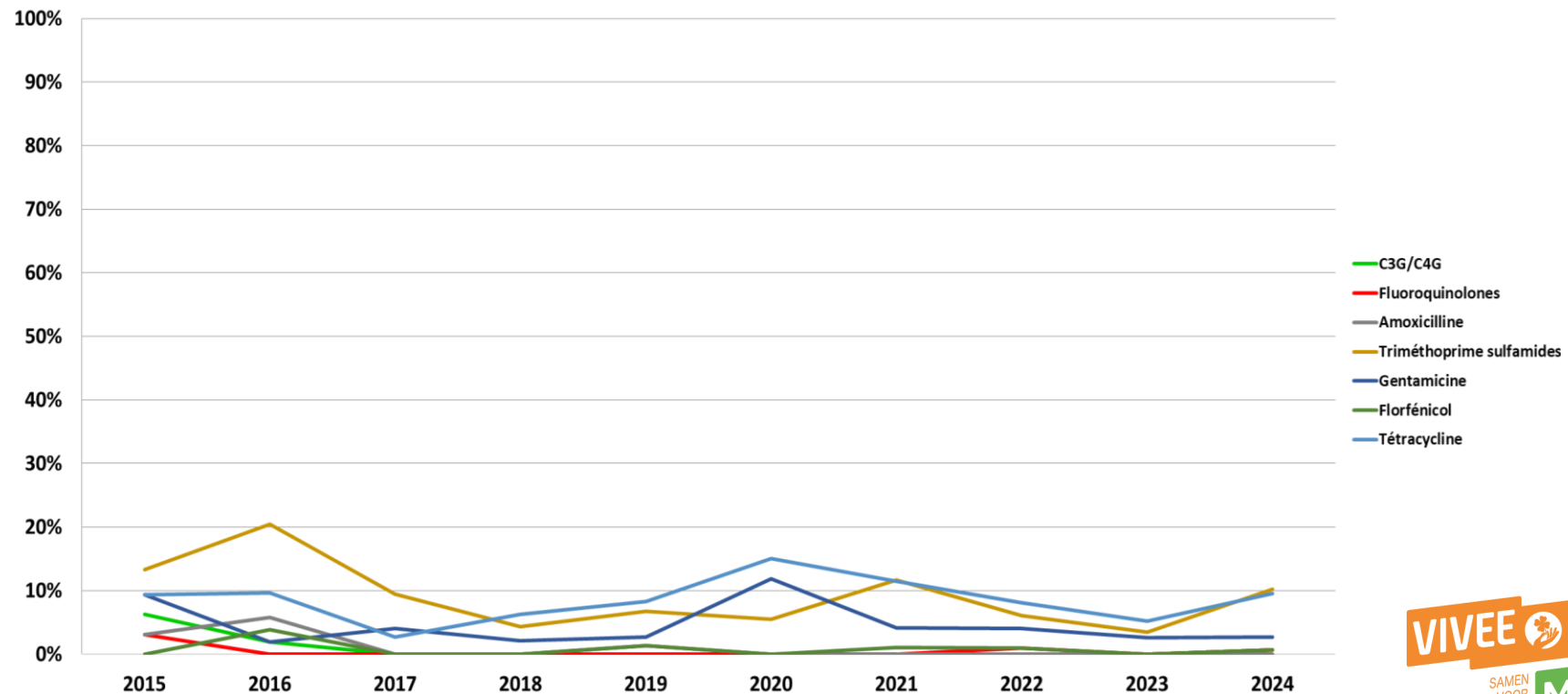
Mannheimia haemolytica in cattle

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	27	51	82	58	53	50	62	55	62	82



P. Multocida in cattle

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	33	65	96	103	79	99	98	99	115	147



Conclusion

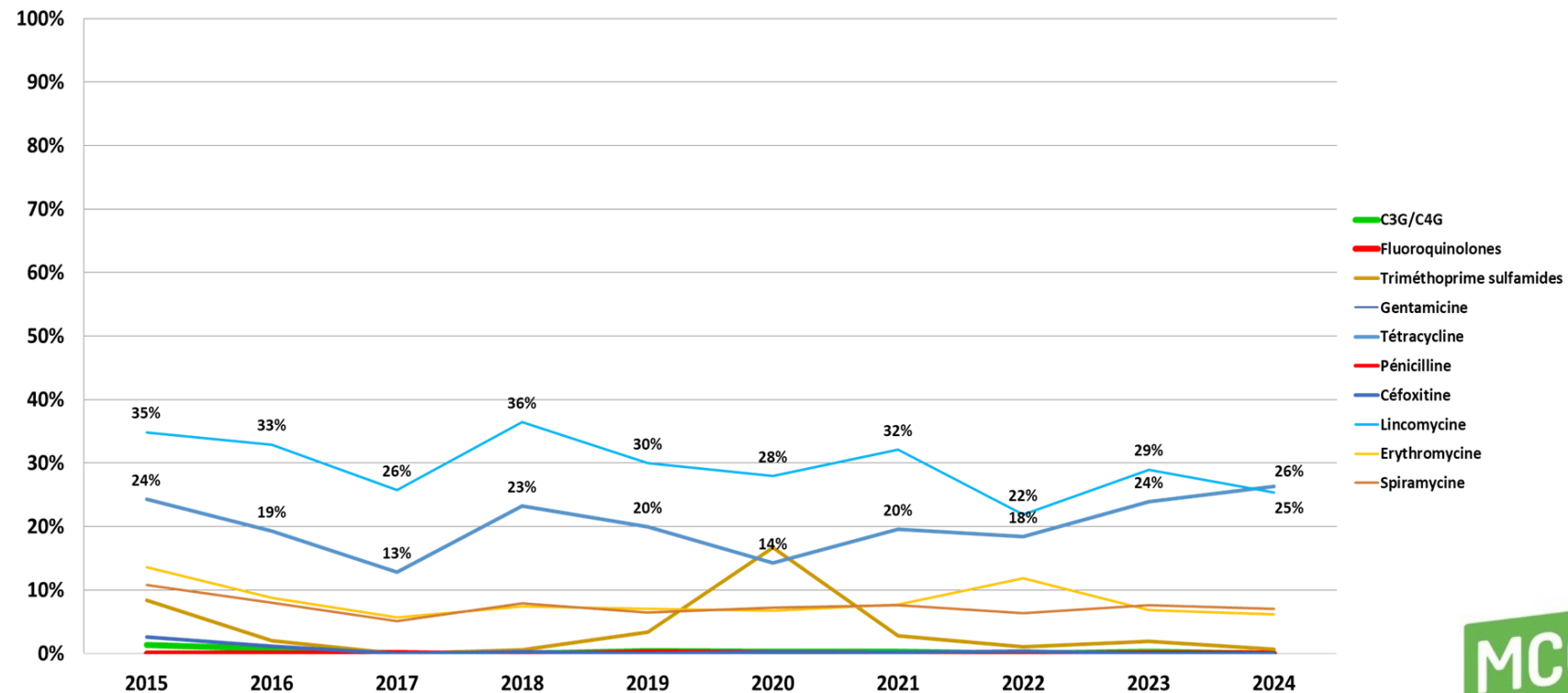
- Some class A and B antibiotics show a high degree of resistance ($> 50\%$), which can lead to treatment failure
- Cephalosporins and quinolones have shown a clear decrease in resistance over the past 10 years, although regional differences in resistance levels are observed
- Resistance also varies between different sectors
- Respiratory pathogens generally exhibit low and stable resistance over recent years



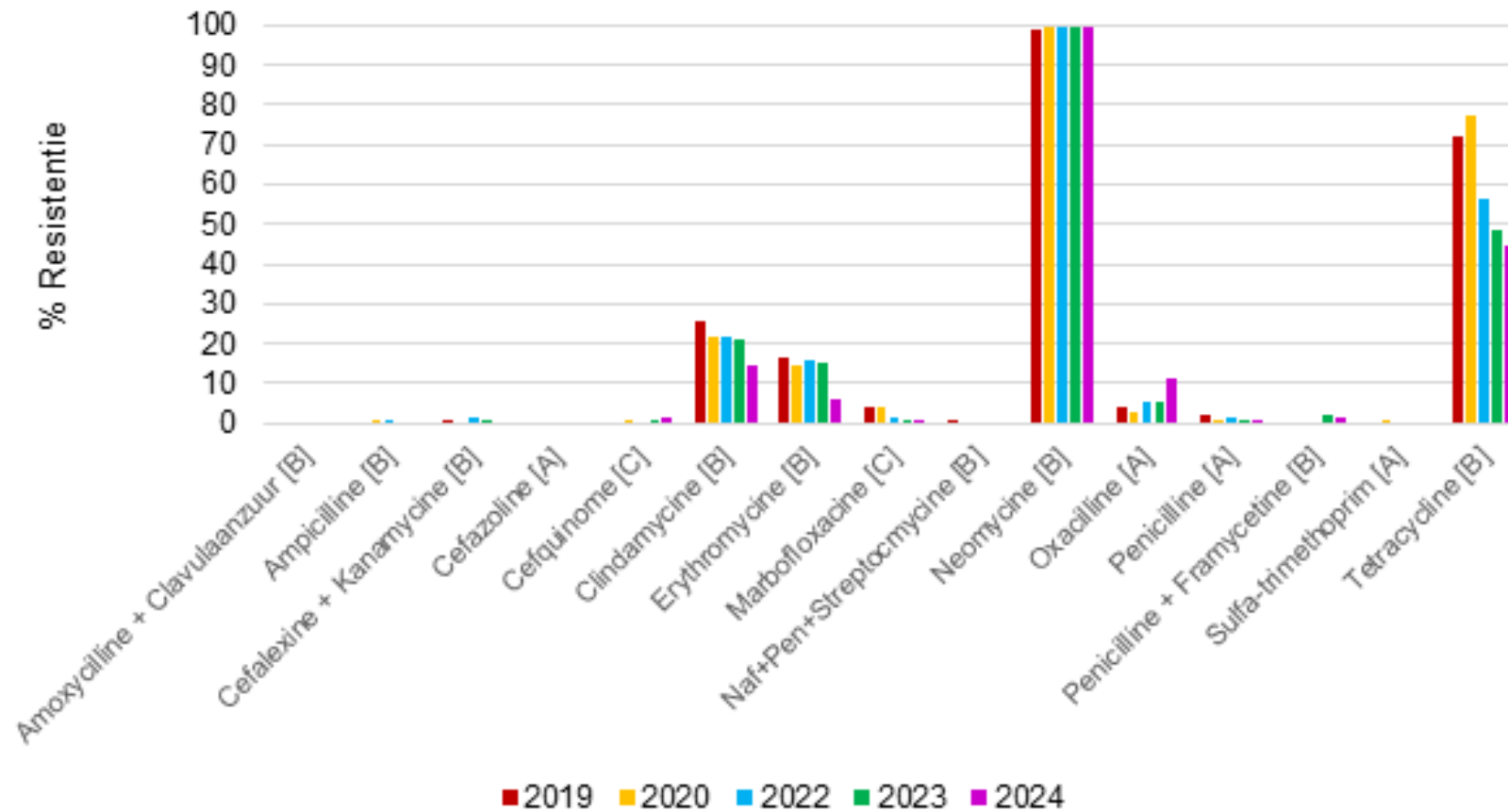
Mastitis

Mastitis isolates: *Streptococcus uberis*

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
N	161	326	426	358	284	355	413	271	314	414



Mastitis isolates: *Streptococcus dysgalactiae*



Conclusion

- Resistance in *E. coli* and *S. aureus* is relatively low
- *S. uberis* and *S. dysgalactiae* show resistance to clindamycin, lincomycin, and tetracycline
- Resistance to critical antibiotics remains very low
- Overall a stable trend in resistance over time



ANY QUESTIONS?



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