



Antimicrobial resistance of *E. coli* from fresh pig, broiler and turkey meat after 10 years of antimicrobial minimization concept in Germany

01.04.2025, Food Microbiology, Berlin

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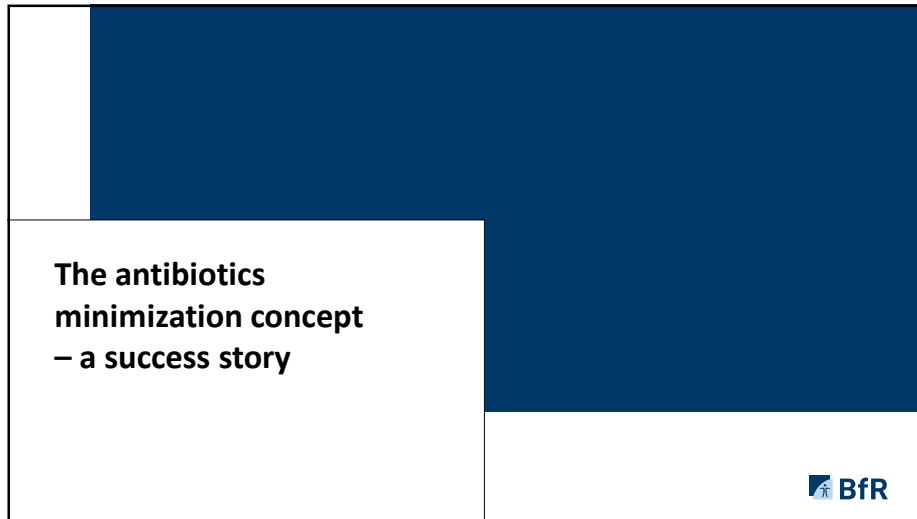
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What will I be talking about

- Brief recap: The antibiotics minimization concept
- Effect on antimicrobial consumption
 - Effect on AMR in bacteria from animals at slaughter
 - Effect on AMR in bacteria from meat
- Outlook

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The antibiotics minimization concept – a success story



The antibiotics minimization concept

Background: High antimicrobial use in food producing animals at the beginning of the last decade

Idea & Principle: A benchmarking system requiring poorly performing farms to take action

Action values: Derived from the data distribution on treatment frequency

Realisation: 16th amendment of the German Drug Law in 2014

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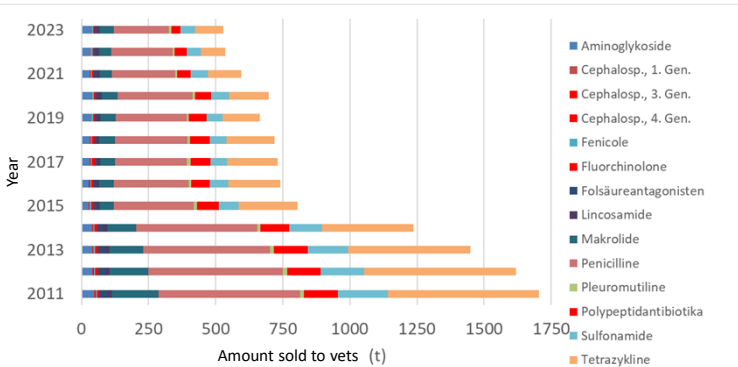


Populations addressed in 1st phase of minimization

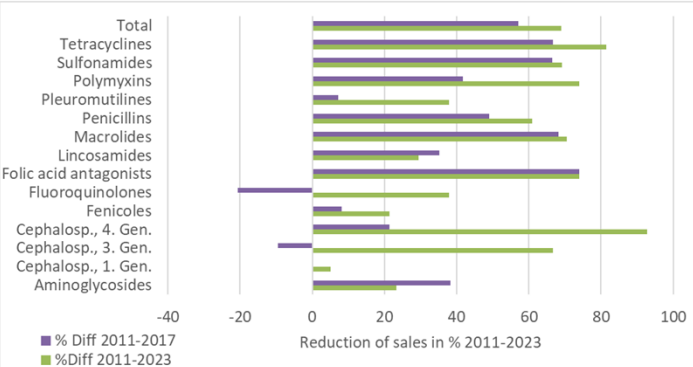
Poultry	Pigs	Cattle
Broilers (hatch to slaughter) 	Weaned piglets to 30 kg 	Calves for meat production to 8 months 
Turkeys (hatch to slaughter) 	Fattening pigs >30kg 	Beef cattle >8 months 

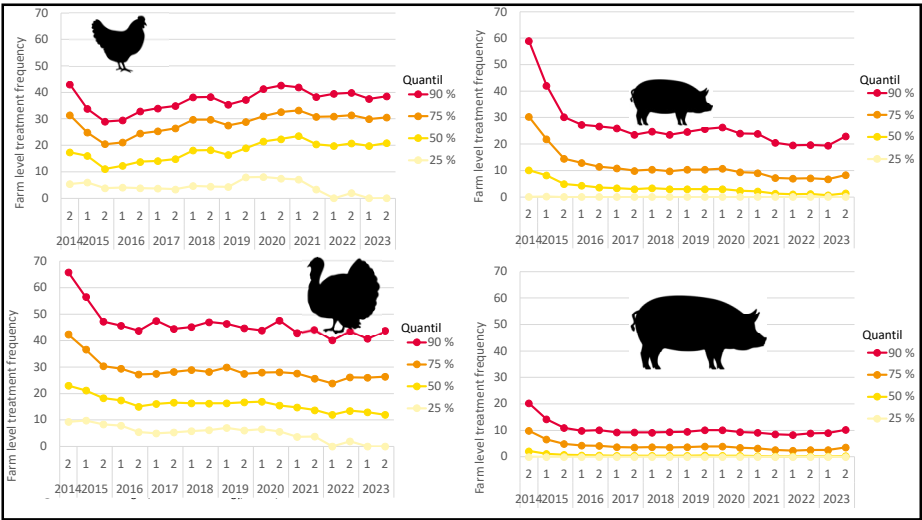
Effect on antimicrobial consumption

Sales data of antimicrobials for animals 2011 bis 2023 (BVL 2024)

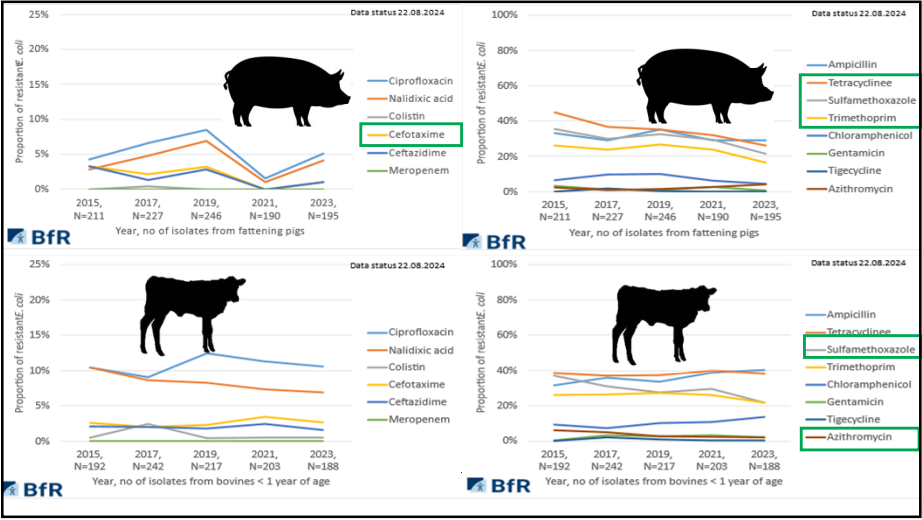
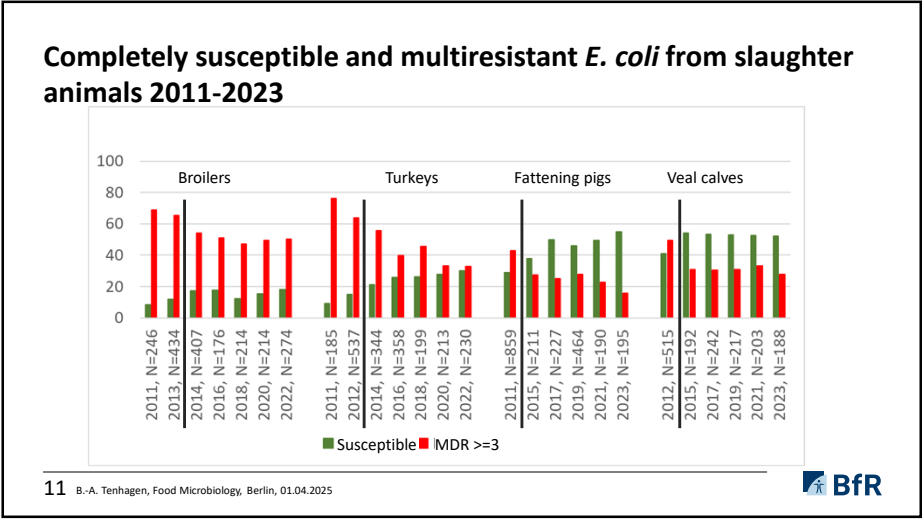


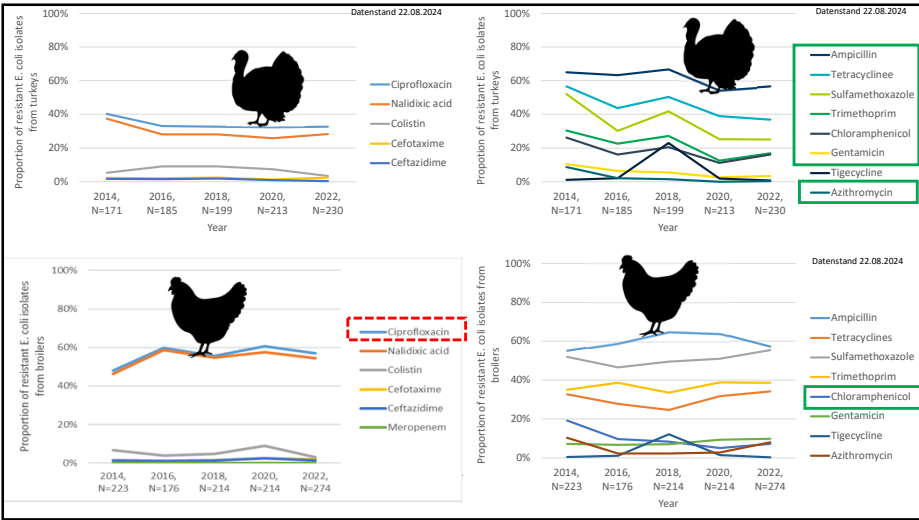
Reduction of antimicrobial sales to veterinarians 2011-2023 (% of original amount) (BVL 2024)





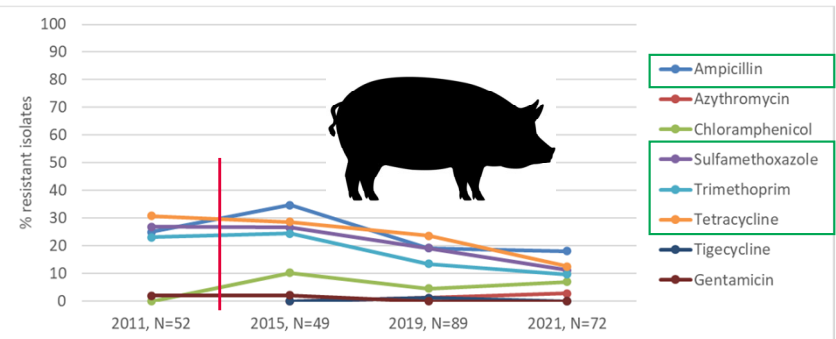
Resistance in *E. coli* from animals



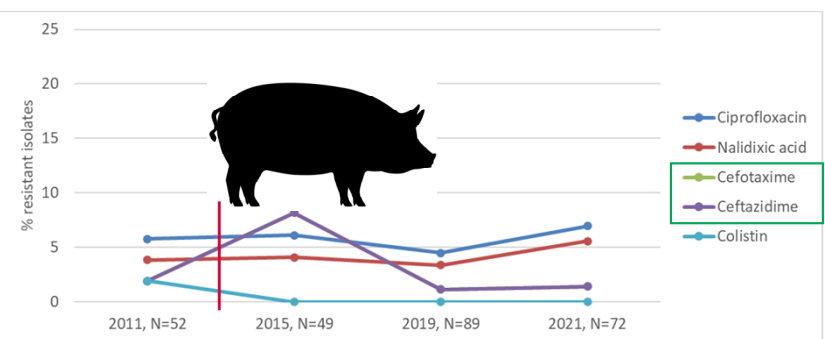


Resistance in *E. coli* from meat

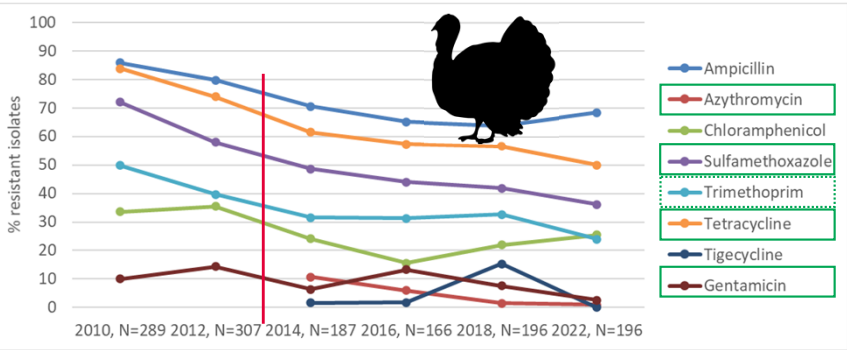
AMR in *E. coli* from pork – AMEG category C&D



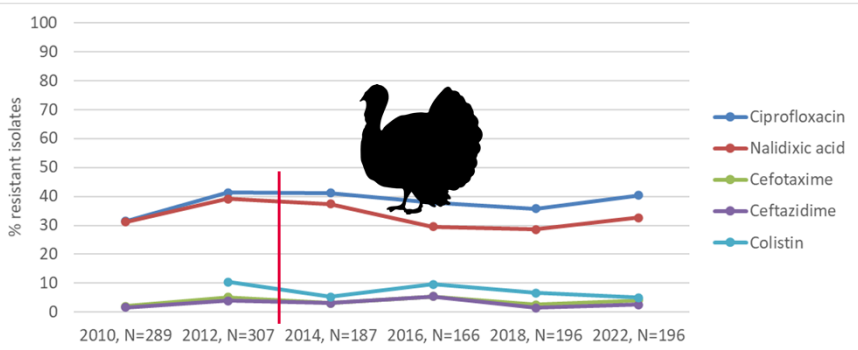
AMR in *E. coli* from pork – AMEG category B



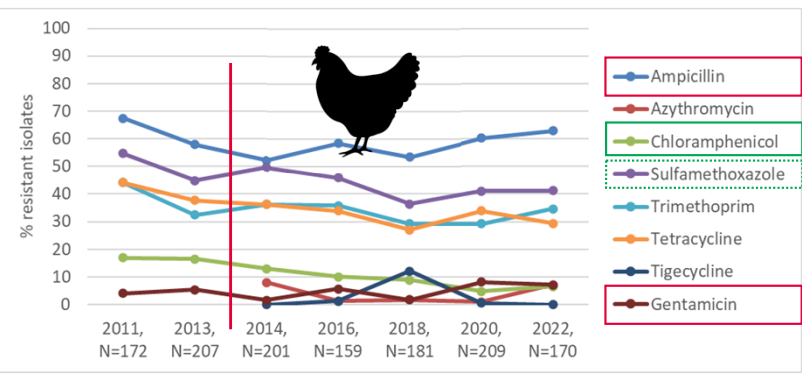
AMR in *E. coli* from turkey meat – AMEG category C&D



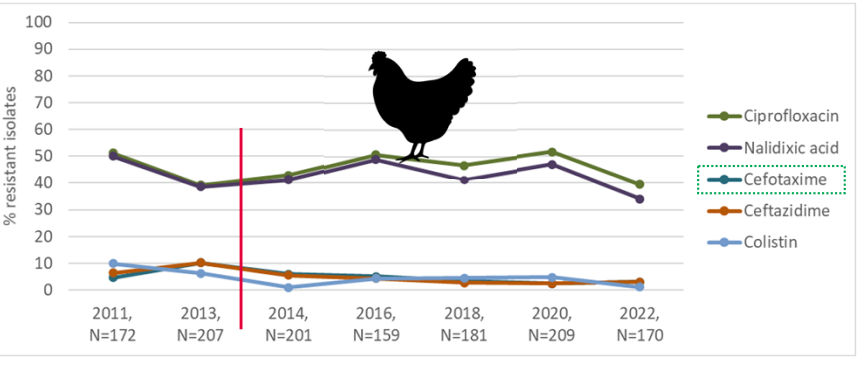
AMR in *E. coli* from turkey meat – AMEG category B



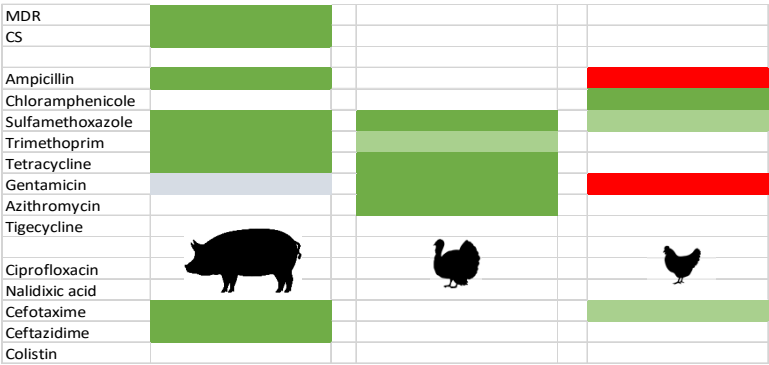
AMR in *E. coli* from broiler meat – AMEG category C&D



AMR in *E. coli* from broiler meat – AMEG category B



Development of resistance in *E. coli* from fresh meat at retail
2014-2022



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Conclusion and outlook

Reduction in AMU in farm animals

- was associated with reduction in AMR in *E. coli* from animals and food
- will reduce exposure of consumers to resistant bacteria in food
- Differed between populations
- This had an effect on resistance development in the populations
- We need to continue reduction efforts in all populations (incl. humans...)

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Thank you for your curiosity



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