FINRES-Vet 2025

Finnish Veterinary Antimicrobial Resistance Monitoring and Consumption of Antimicrobial Agents



SUMMARY

The full report is available at www.ruokavirasto.fi

RUOKAVIRASTO
Livsmedelsverket • Finnish Food Authority

fimea
Lääkealan turvallisuus- ja kehittämiskeskus
Säkerhets- och utvecklingscentret för läkemedelsområdet
Finnish Medicines Agency

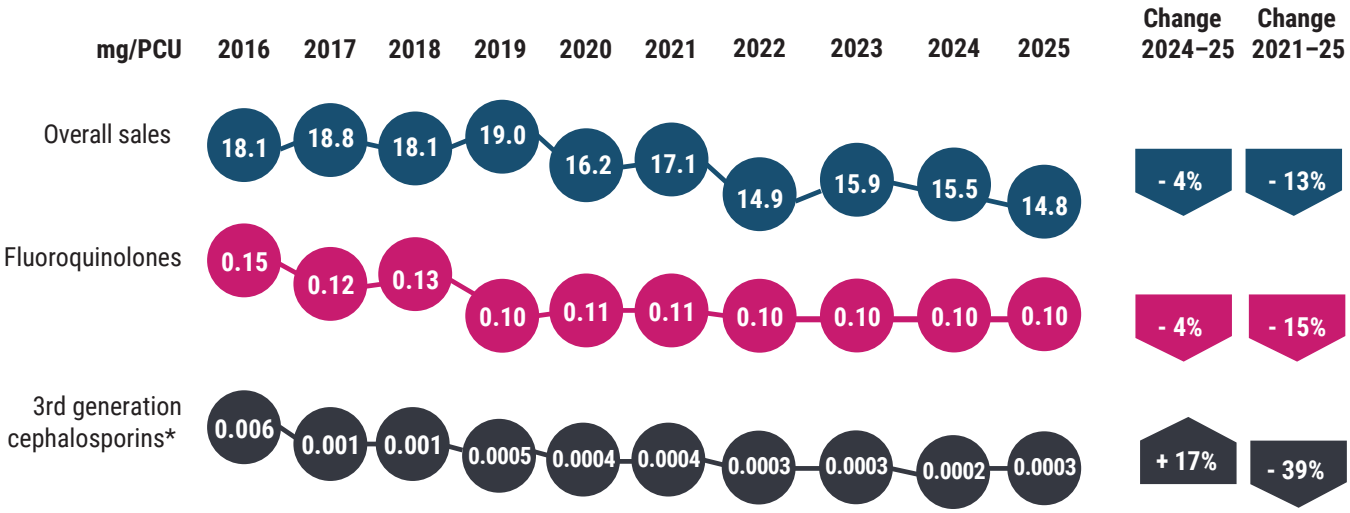
HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI

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ANTIBIOTICS FOR FOOD-PRODUCING ANIMALS

EU-indicators for the sales of antibiotics in food-producing animals (mg/PCU)

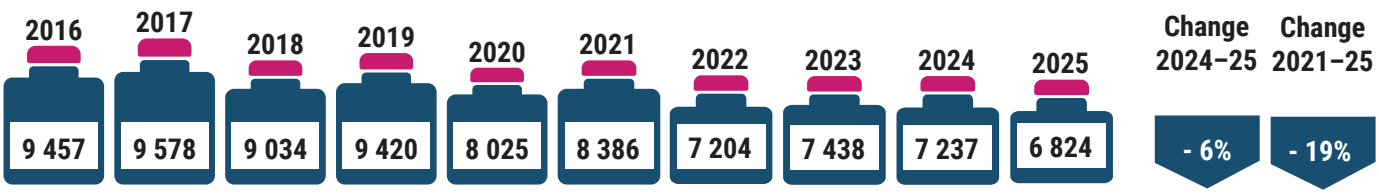
Population adjusted overall sales of veterinary antibiotics in 2025 was 14.8 mg/PCU, being the lowest ever recorded. Overall sales decreased by 4% from 2024 to 2025. Sales of critically important antibiotics for human medicine continued to be very low.



* Since 2017, 3rd generation cephalosporins have been sold only for the treatment of foals and companion animals.

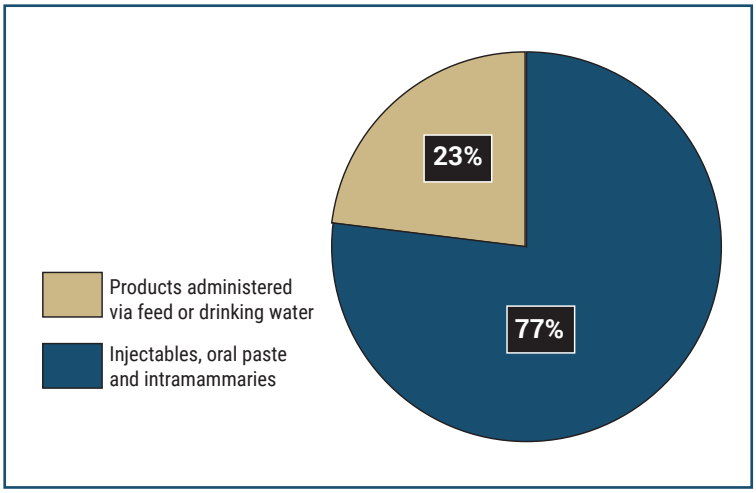
Total sales (kg active ingredient)

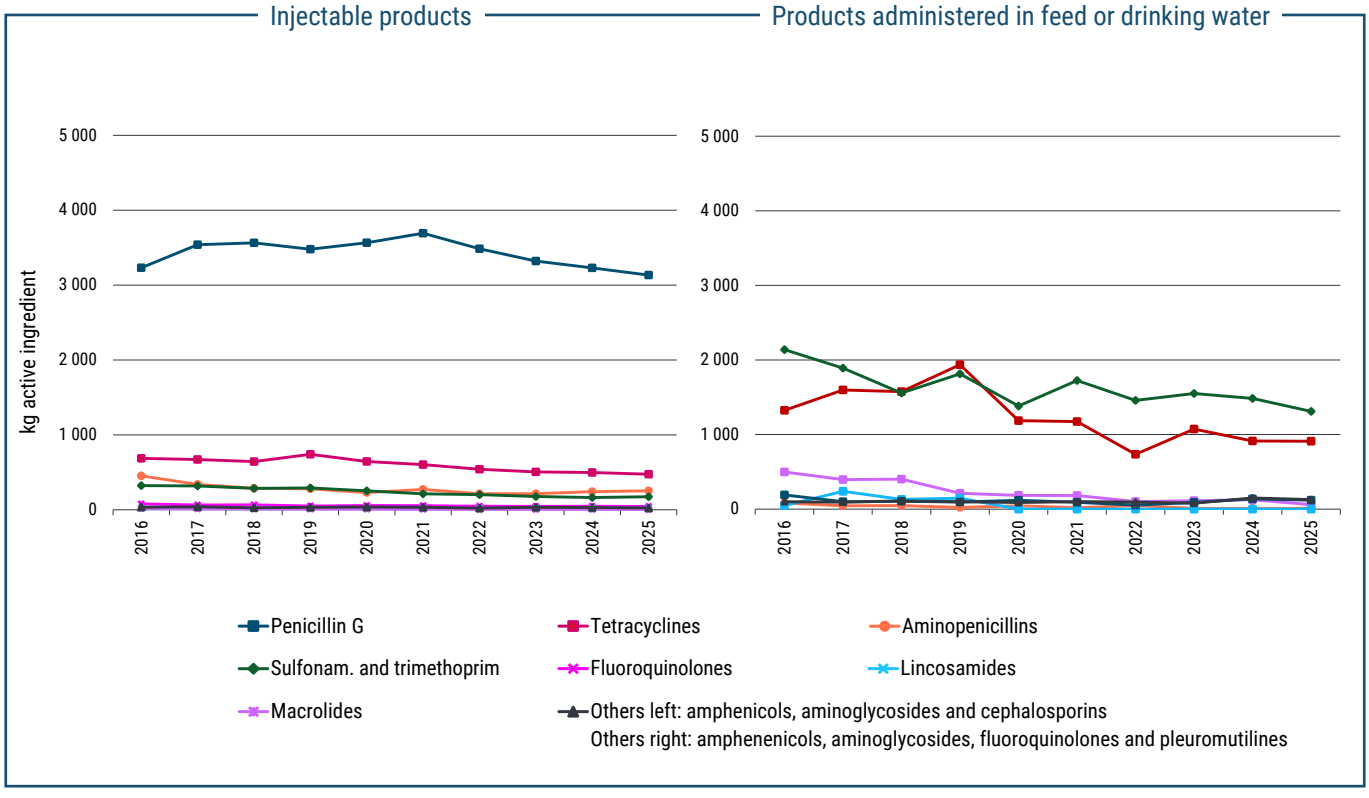
Total sales of veterinary antimicrobials for use in food-producing animals decreased by 6%. On international comparison, sales of antibiotics in Finland continues to be modest and prudent both considering EU-indicators and total sales.



Sales by administration route (kg active ingredient)

Over three quarters, 77% of the antibiotics for food-producing animals were products intended for treatment of individual animals (injectables, oral paste, intramammaries). The remaining quarter was antibiotics administered via feed or drinking water to groups of animals. By far the most used antibiotic was injectable benzylpenicillin followed by oral sulfonamide-trimethoprim combination and oral tetracyclines.

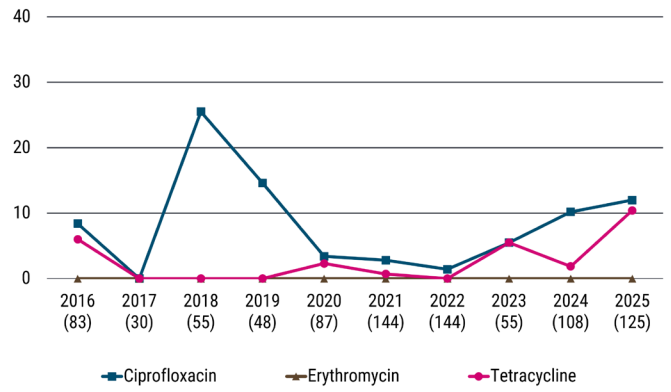




CAMPYLOBACTER IN FOOD-PRODUCING ANIMALS

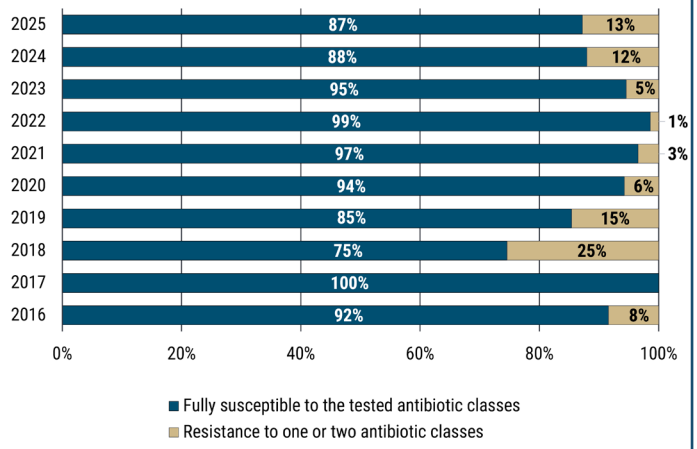
Among isolates of *Campylobacter jejuni* obtained from broiler chickens, 12% were resistant to fluoroquinolones and 10.4% were resistant to tetracycline. Compared to the previous year, resistance to tetracycline increased by 8.5 percentage points, and resistance to fluoroquinolones increased by 1.8 percentage points. None of the isolates were resistant to erythromycin. The proportion of isolates susceptible to all tested antibiotics was 87%.

Resistance to ciprofloxacin, erythromycin and tetracycline in *C. jejuni* from broilers (%)



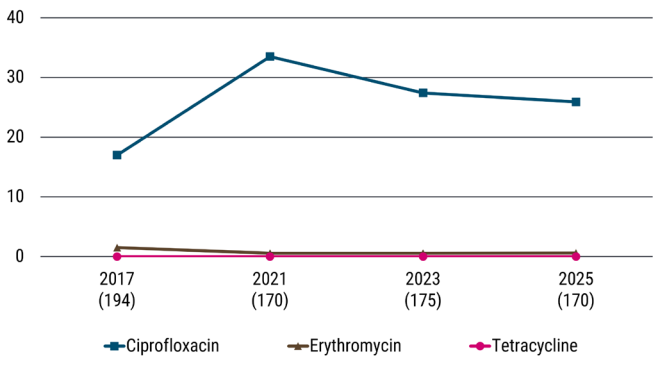
The number of bacterial strains tested each year is shown in brackets.

Antibiotic susceptibillity in *C. jejuni* from broilers



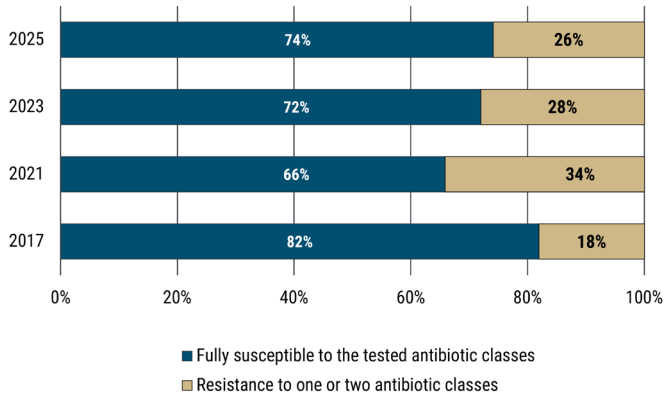
Among isolates of *Campylobacter coli* obtained from pigs, 25.9% were resistant to fluoroquinolones and 0.6% were resistant to erythromycin. Compared to the previous year, resistance to fluoroquinolones decreased by 1.5 percentage points, and resistance to erythromycin remained at the same level. None of the isolates were resistant to tetracycline. The proportion of isolates susceptible to all tested antibiotics was 74%.

Resistance to ciprofloxacin, erythromycin and tetracycline in *C. coli* from pigs (%)



The number of bacterial strains tested each year is shown in brackets.

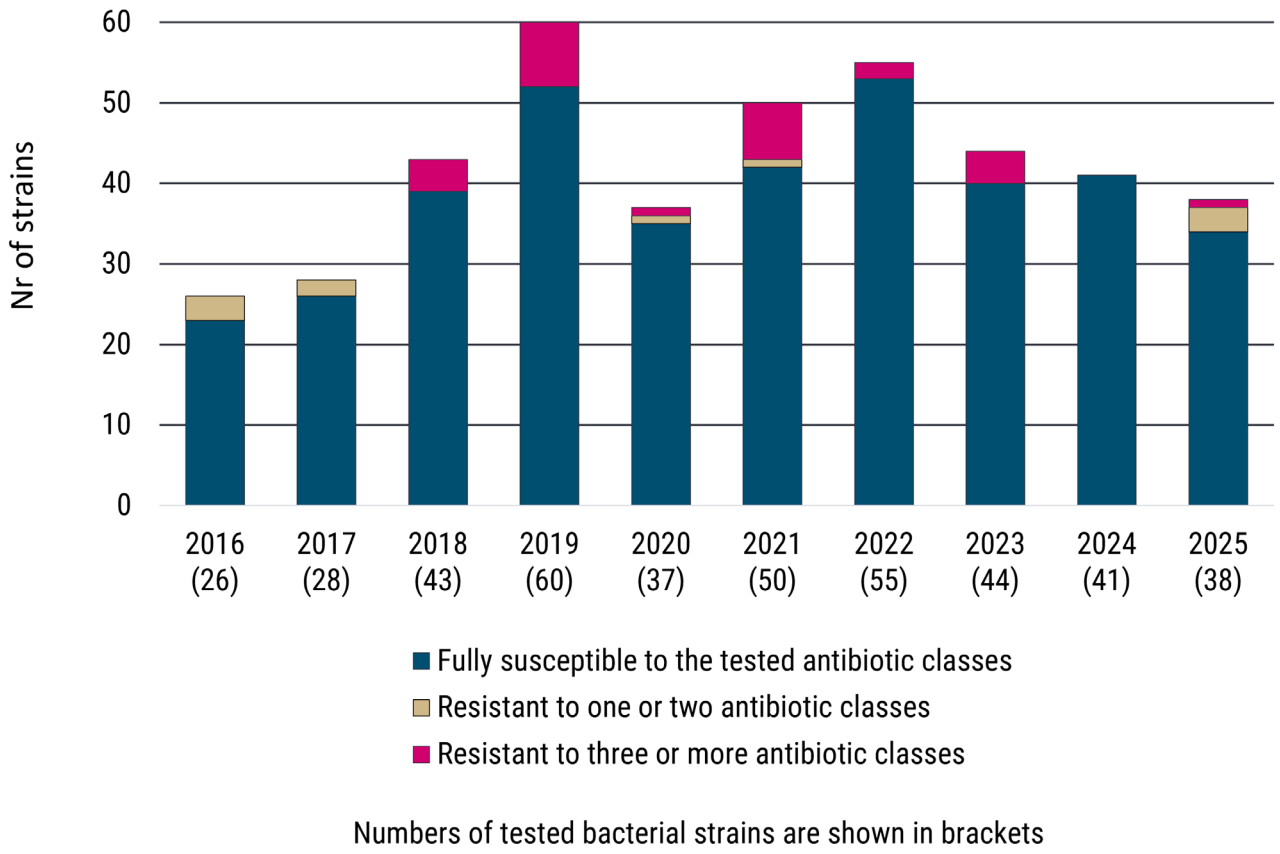
Antibiotic susceptibility in *C. coli* from pigs



SALMONELLA IN FOOD-PRODUCING ANIMALS

Salmonella isolates obtained from Finnish food-producing animals have mostly been susceptible to the tested antibiotic classes and multidrug resistance has not been commonly detected. In 2025, one *Salmonella Typhimurium* isolated from a cattle farm was resistant to ampicillin, sulfamethoxazole and trimethoprim.

Detected salmonella strains and their resistance in Finnish food-producing animals



Numbers of tested bacterial strains are shown in brackets



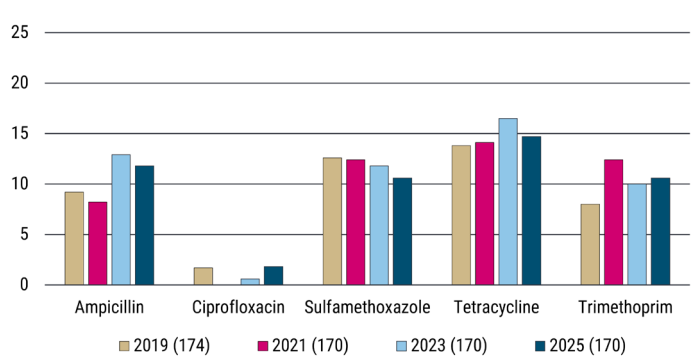
MRSA IN PIGS

The prevalence of MRSA in fattening pigs at slaughter was 100% as 129/129 slaughter batches were found positive. All isolates belonged to the livestock associated clade of clonal complex (CC) 398.

INDICATOR BACTERIA IN FOOD-PRODUCING ANIMALS

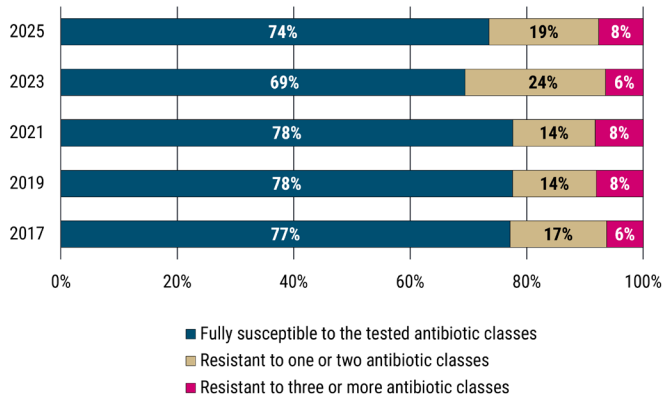
The majority of indicator *Escherichia coli* isolates from pigs was fully susceptible to the tested antibiotic classes. Resistance was mostly detected against tetracycline, ampicillin, sulfamethoxazole and trimethoprim. The proportion of isolates resistant to one or two antibiotic classes increased in 2025. The proportion of multidrug resistance was 8% in 2025.

Resistance in indicator *E. coli* from pigs to selected antibiotics (%)



The number of bacterial strains tested each year is shown in brackets.

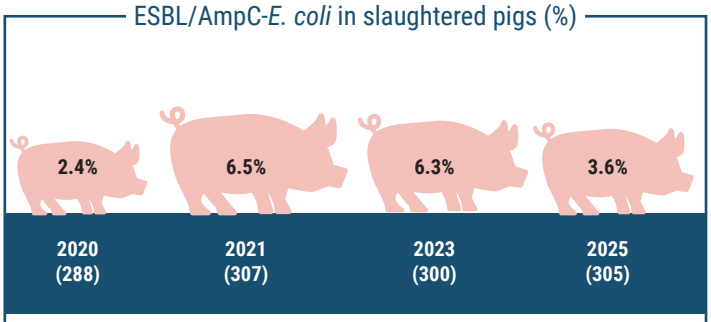
Antibiotic resistance in indicator *E. coli* from pigs



ESBL BACTERIA IN FOOD-PRODUCING ANIMALS AND MEAT

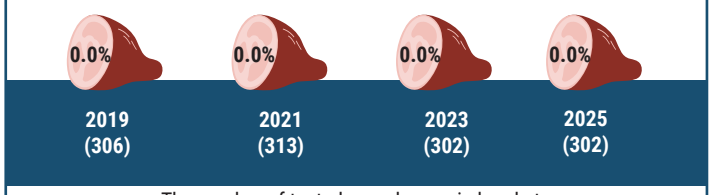
The prevalence of ESBL- and AmpC-producing *E. coli* in pigs at slaughter decreased from 2023. In pork and beef samples taken at retail ESBL and AmpC findings have been rare. Carbapenemase-producing *E. coli* have not been found.

ESBL/AmpC-*E. coli* in slaughtered pigs (%)



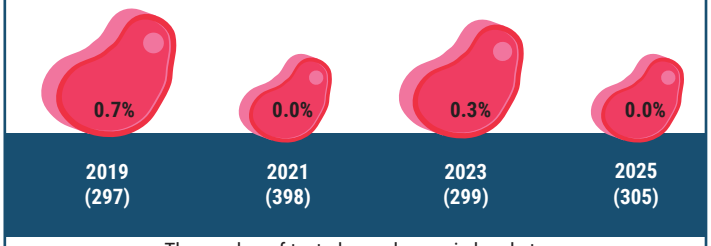
The number of tested samples are in brackets

ESBL/AmpC-*E. coli* in fresh pork meat at retail (%)



The number of tested samples are in brackets

ESBL/AmpC-*E. coli* in fresh beef meat at retail (%)

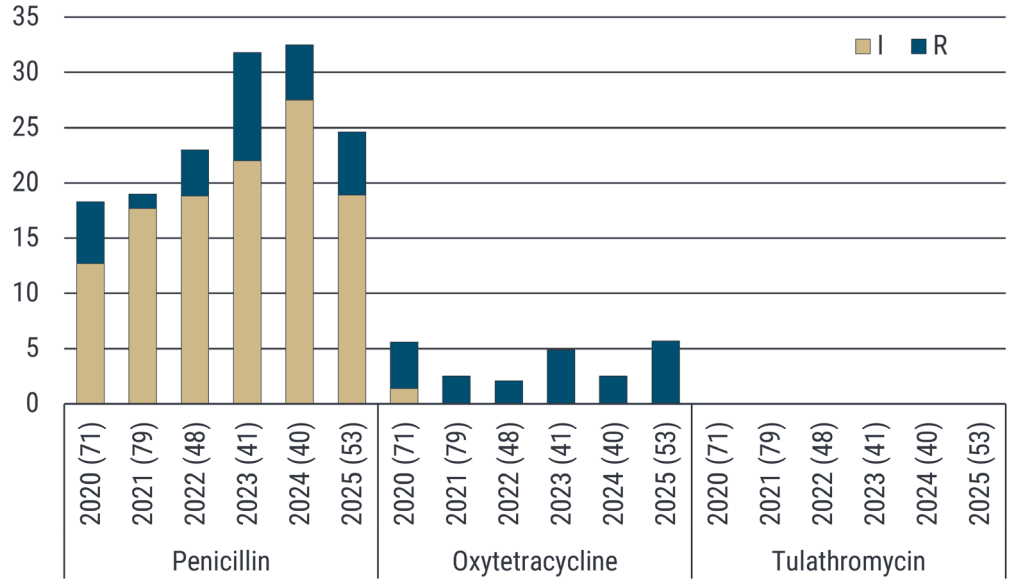


The number of tested samples are in brackets

PATHOGENS IN FOOD-PRODUCING ANIMALS

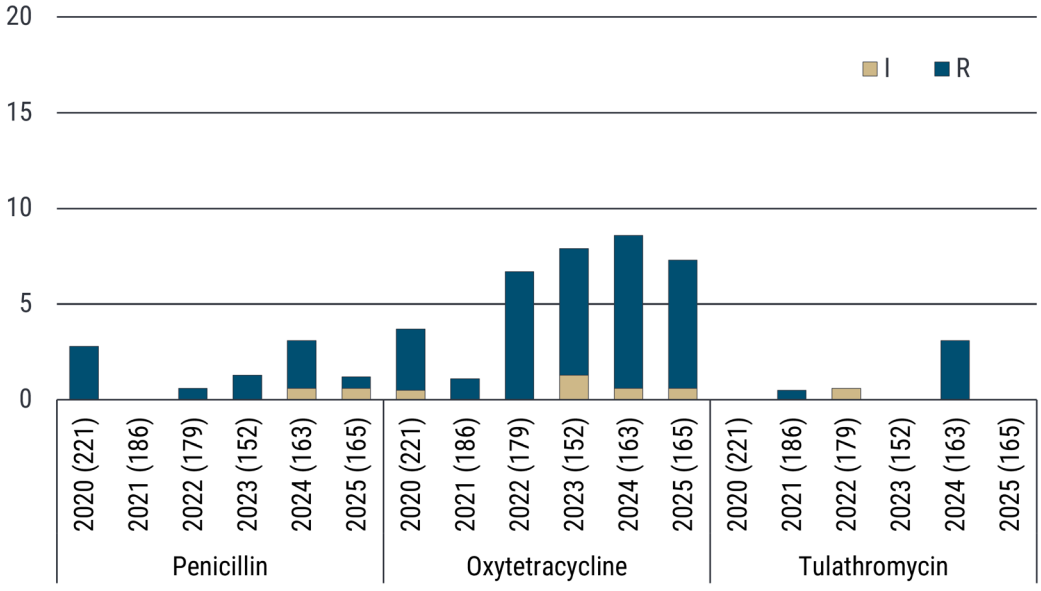
Among bovine respiratory pathogens, antibiotic susceptibilities of *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* bacteria isolated from diseased animals are reported. The proportion of resistant bacteria has remained at a low level.

The proportion (%) of *M. haemolytica* from bovine respiratory disease with decreased susceptibility*



The number of bacterial strains tested each year is shown in brackets.

The proportion (%) of *P. multocida* from bovine respiratory disease with decreased susceptibility*

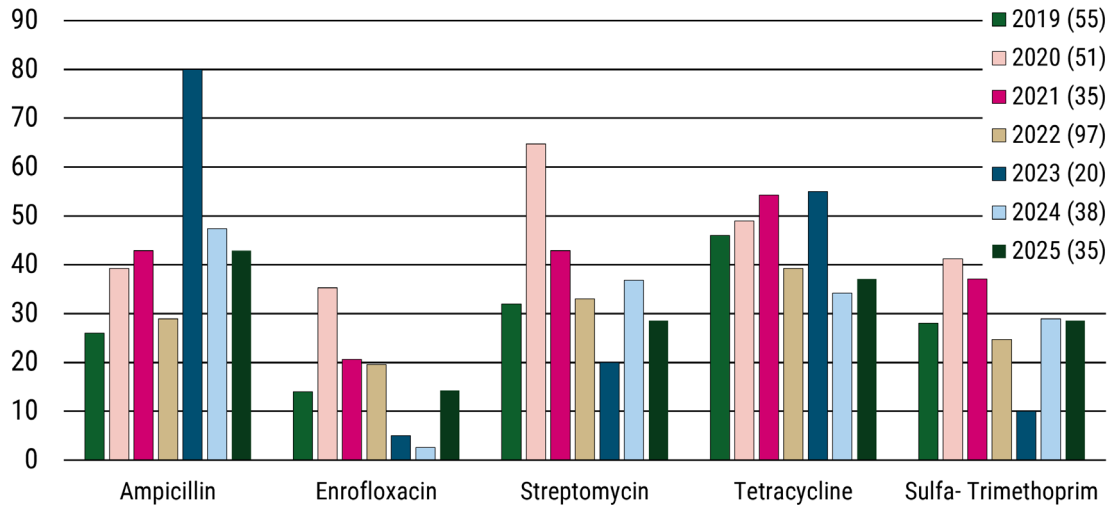


The number of bacterial strains tested each year is shown in brackets.

*Decreased susceptibility means that bacterial strains are phenotypically either resistant (R) or intermediately susceptible (I) to the antibiotic in question according to clinical breakpoints.

Among swine pathogens, the antibiotic susceptibilities of enterotoxigenic *E. coli*, *Brachyspira pilosicoli* and *Actinobacillus pleuropneumoniae* isolates from diseased animals are reported. In *B. pilosicoli* no significant changes were detected in 2025 compared to the previous years. In *A. pleuropneumoniae* no resistance was detected among the isolates against any of the antimicrobials tested. Decreased susceptibility against oxytetracycline was common and has increased in recent years. Regarding enterotoxigenic *E. coli*, no dramatic changes have been observed in the antibiotic resistance situation. AmpC producing strains were detected in two farms, but no ESBL-*E. coli* was detected.

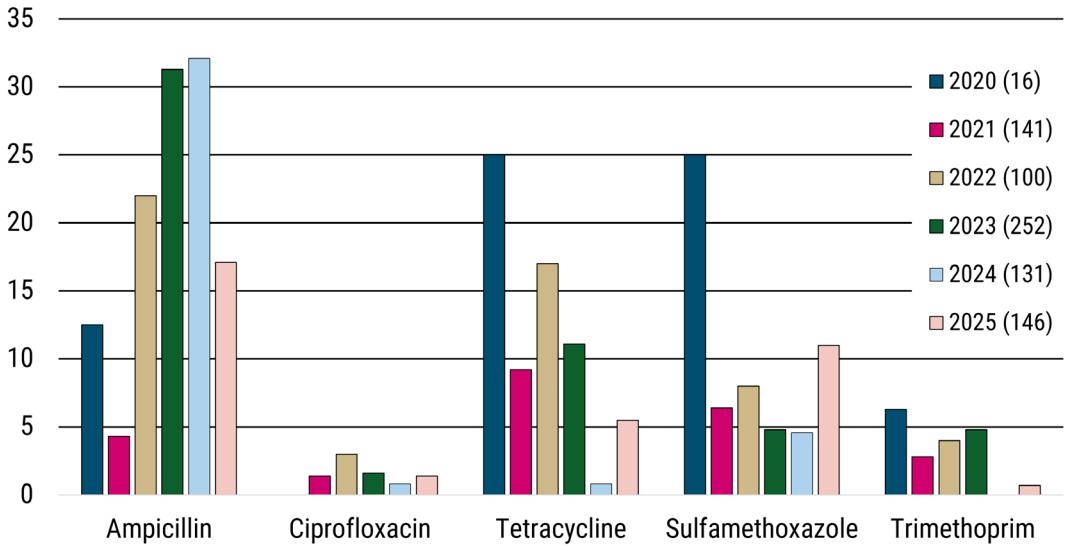
The proportion (%) of enterotoxigenic *E. coli* from porcine enteritis with decreased susceptibility*



The number of bacterial strains tested each year is shown in brackets.

Among poultry pathogens, the antibiotic susceptibilities of *E. coli* from colibacillosis cases are reported. In 2025, resistance against ampicillin decreased slightly compared to previous years. No resistance to 3rd generation cephalosporins was detected.

The proportion (%) of *E. coli* from broiler colibacillosis with decreased susceptibility*



The number of bacterial strains tested each year is shown in brackets.

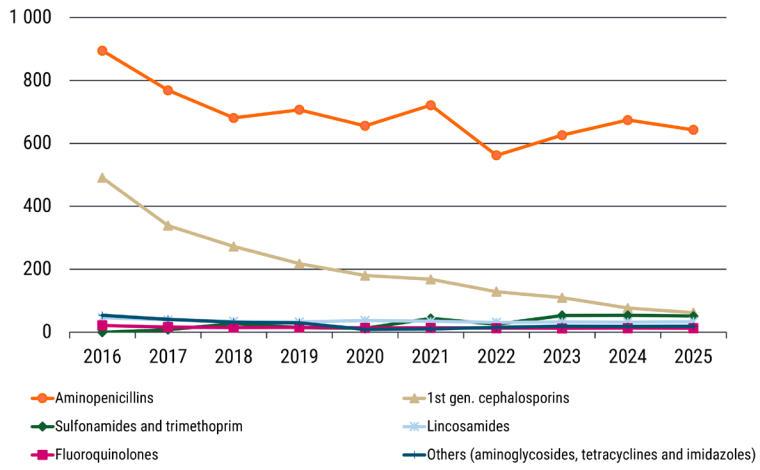
*Decreased susceptibility means that bacterial strains are phenotypically either resistant (R) or intermediately susceptible (I) to the antibiotic in question according to clinical breakpoints.

ANTIBIOTICS AND PATHOGENS IN COMPANION ANIMALS

Sales of tablets

Monitoring sales of antibiotics intended for companion animals is currently possible only for veterinary antimicrobial tablets. Their sales have more than halved since the peak year 2011. From 2024 to 2025 the decrease continued by 5%. This was mainly due to decreased sales of the most sold veterinary antibiotic tablet, amoxycillin-clavulanic acid combination (-5%). Decrease was noted also in sales of 1st generation cephalosporins and fluoroquinolones (-19% and -4% respectively).

Sales of tablets (kg)



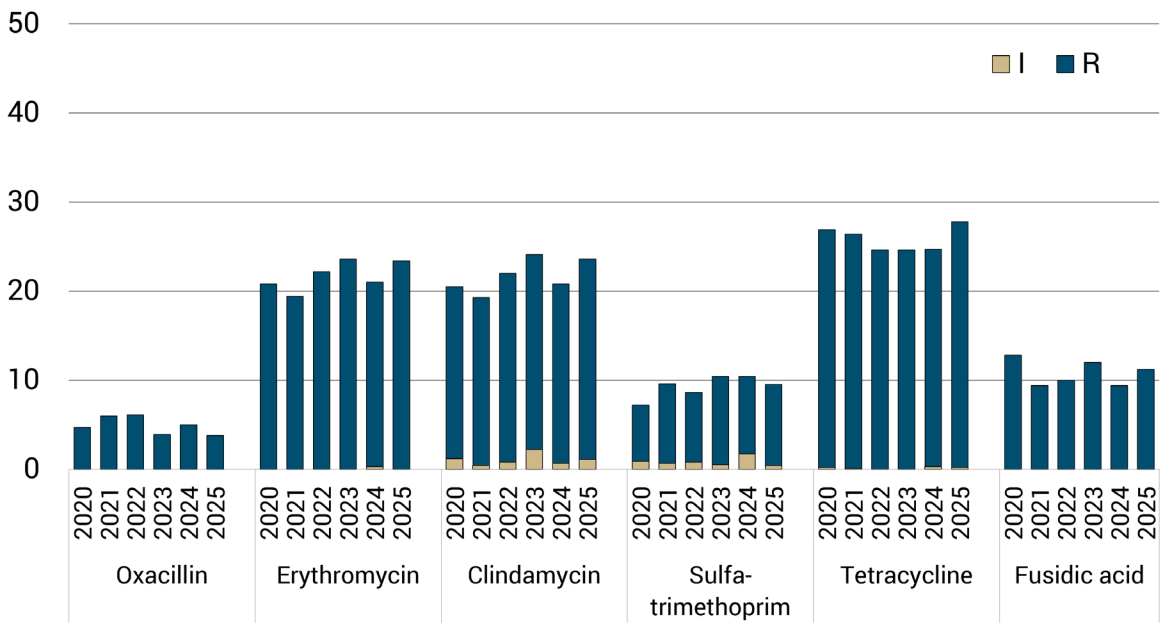
The number of dogs and cats

According to Statistics Finland, the number of dogs and cats in Finland in 2016 was about 700 000 and 600 000, respectively. It has been estimated that the number of companion animals increased during the Covid-19 pandemic. According to a survey commissioned by the Finnish Kennel Club, there were approximately 800 000 dogs in Finland in 2023.

Antibiotic resistance

The proportion of oxacillin resistance in canine *S. pseudintermedius* has decreased, being 3.8% in 2025.

The proportion (%) of canine *S. pseudintermedius* isolates with a lowered susceptibility*

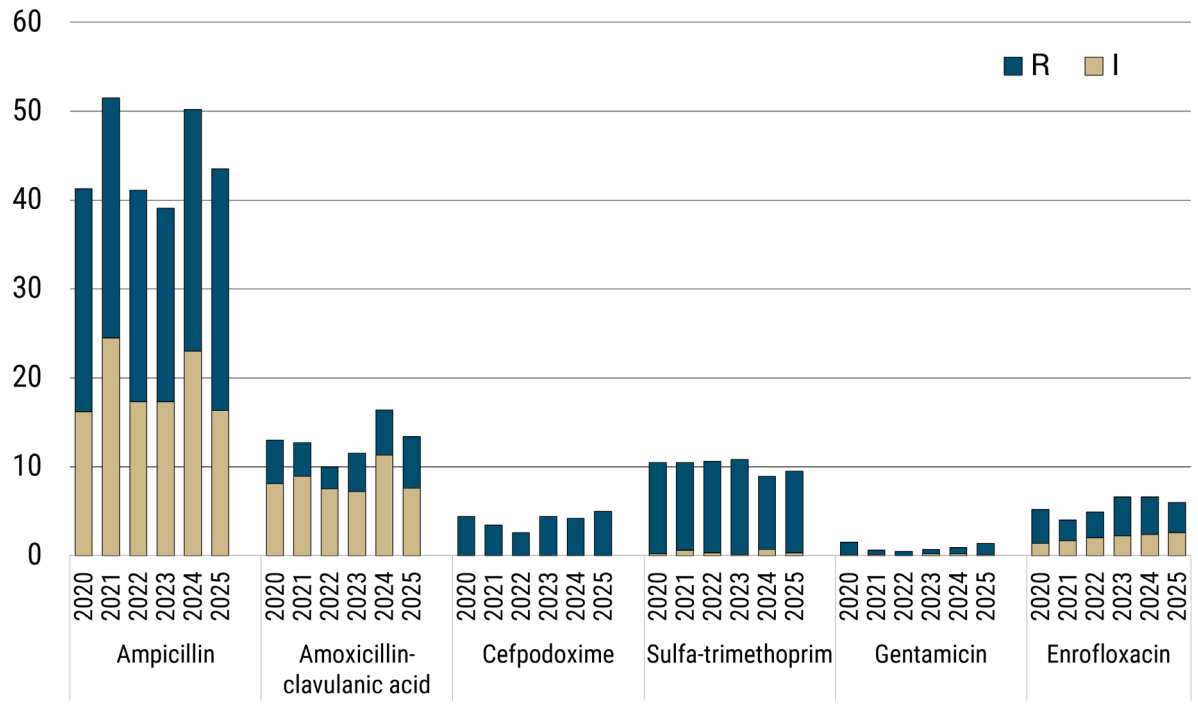


The number of bacterial strains tested each year ranged from 301 to 800.

*Decreased susceptibility means that bacterial strains are phenotypically either resistant (R) or intermediately susceptible (I) to the antibiotic in question according to clinical breakpoints.

The proportion of cefpodoxime resistance among canine *E. coli* has increased, being 5.0% in 2025, a notable increase since 2022, when it was only 2.6%.

The proportion (%) of canine *E. coli* isolates with a lowered susceptibility*



The number of bacterial strains tested each year ranged from 549 to 1265.

*Decreased susceptibility means that bacterial strains are phenotypically either resistant (R) or intermediately susceptible (I) to the antibiotic in question according to clinical breakpoints.