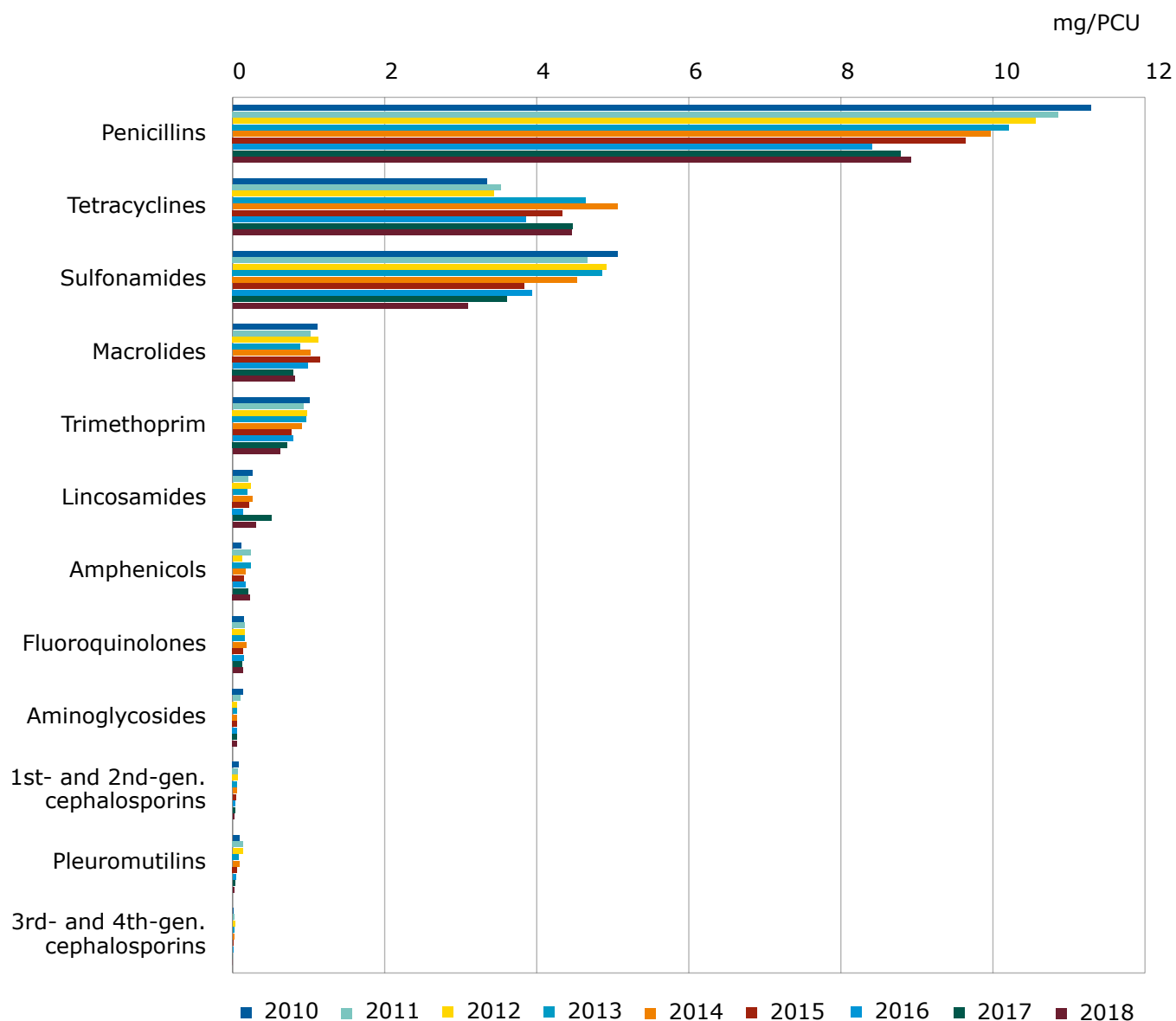


# FINLAND



## CHANGES IN SALES (MG/PCU) ACROSS YEARS



No sales of other quinolones, polymyxins and other antibacterials in any of the years.

Overall sales of veterinary antimicrobials in Finland continued to be low: approximately 19 mg/PCU in 2018. A marked decrease in overall sales was observed over the decade, with sales falling by 4 mg/PCU (18%) from 2010 to 2018.

Penicillins continued to be the most-sold antimicrobial class (48% in 2018), followed by tetracyclines (24%) and sulfonamides (17%). Beta-lactamase-sensitive penicillins accounted for 92% of the sales of all penicillins. Most antimicrobial classes show a decreasing trend, but there are some exceptions. In the long term (from 2010), the most significant changes in mg/PCU were the decreases in sales of penicillins and the sulfonamide-trimethoprim combination, although a slight increase of 2% in the sales of penicillins was observed from 2017 to 2018. Sales of tetracyclines show an increasing trend from 2010 to 2018.

No 4th-generation cephalosporins are on the market in Finland, and 3rd-generation cephalosporins are only available as injectables. Sales of 3rd-generation cephalosporins are very low: in 2018 they were 0.0009 mg/PCU, accounting for 0.01 % of total annual sales. From the peak year 2012 (0.03 mg/PCU) to 2018 sales have dropped sharply (97%). The decrease may partially be explained by the control measures targeting high-using veterinarians and partially by changes in national law (e.g. the requirement for susceptibility testing before using the highest priority critically important antimicrobials). The aggregated sales for 25 countries from 2011 to 2018 were 0.18 mg/PCU.

Fluoroquinolones are only available as injectables for food-producing animals in Finland. Sales of fluoroquinolones are low: in 2018 they were 0.13 mg/PCU, representing 1% of total annual sales. From the peak year 2014 (0.18 mg/PCU) to 2018 sales dropped by 25%, while from 2017 (0.12 mg/PCU) to 2018 sales increased slightly by 7%. The aggregated sales for 25 countries from 2011 to 2018 were 2.42 mg/PCU.

Polymyxins and 4th-generation cephalosporins have never been used in food-producing animals in Finland and, as for other quinolones, no sales were reported in any of the years.

The reasons for decreased overall sales are largely unknown. The total population of food-producing animals (measured as PCU) has been relatively stable. The number of pigs shows a decreasing trend whereas the number of poultry has slowly increased during the decade. Finland has a long history of promoting the health and welfare of food-producing animals and is free of several strategically important animal diseases. Prudent use guidelines<sup>1</sup> have been available since 1996 and have been updated three times, most recently in Spring 2016. An overview of the strategic actions taken since 1949 is available on the Finnish Food Authority website<sup>2</sup>.

Prudent use guidance has traditionally targeted treatment of food-producing animals but in recent years, more attention has been directed to veterinarians treating companion animals. Sales of tablets have been relatively high in Finland (approximately 2 tonnes between 2010 and 2014) but since the peak year 2011, a decreasing trend of 49% has been observed. During the period, the number of dogs has been estimated to have increased somewhat while the number of cats has remained stable. Human medicinal products containing antimicrobial agents may also be used in companion animals, but the current data collection method does not capture this data. The amount is anticipated to be modest, as legislation requires veterinarians to prescribe veterinary medicinal products if they are available.

The Finnish Veterinary Antimicrobial Resistance Monitoring and Consumption of Antimicrobial Agents (FINRES-Vet) report has been published since 1999<sup>3</sup>. A fact-finding mission on the prudent use of antimicrobials in animals in Finland was carried out between 16 and 20 May 2016<sup>4</sup>.

<sup>1</sup> <https://www.ruokavirasto.fi/sv/odlare/djurhallning/medicinering-av-djur/beharskad-anvandning-av-lakemedel/principerna-for-behandling-med-mikroblakemedel/rekommendationer-for-olika-djurslag/>

<sup>2</sup> Milestones in prudent use of antimicrobials in animals in Finland: <https://www.ruokavirasto.fi/en/farmers/animal-husbandry/animal-medication/controlled-use-of-medicines/principles-of-antimicrobial-therapy/milestones-combatting-amr/>

<sup>3</sup> <https://www.ruokavirasto.fi/en/farmers/animal-husbandry/animal-medication/monitoring-of-antibiotic-resistance/finres-vet-reports/>

<sup>4</sup> [https://ec.europa.eu/food/audits-analysis/audit\\_reports/details.cfm?rep\\_id=3715&rep\\_inspection\\_ref=xxx](https://ec.europa.eu/food/audits-analysis/audit_reports/details.cfm?rep_id=3715&rep_inspection_ref=xxx)

