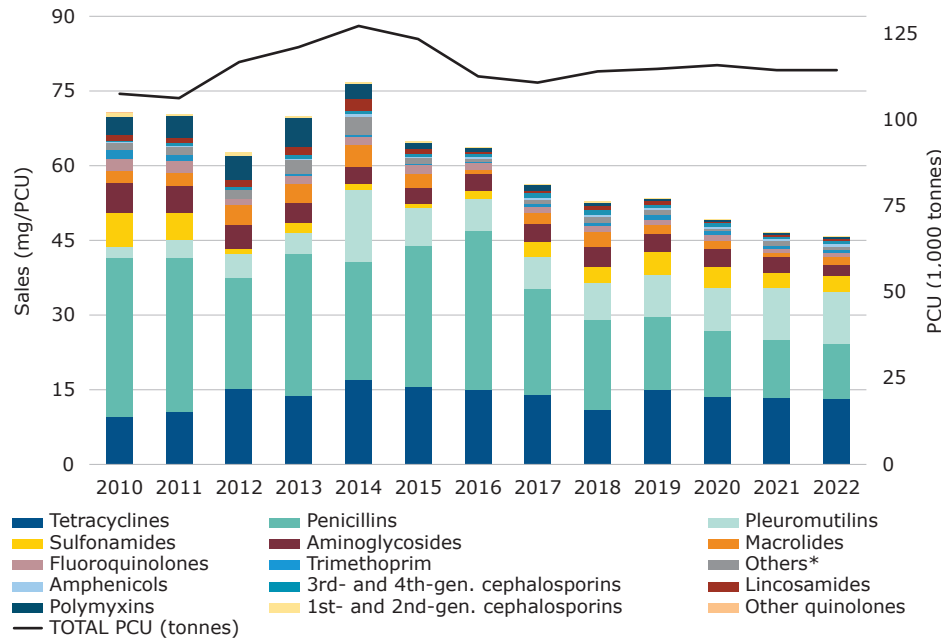


Sales trends (mg/PCU) of antibiotic VMPs for food-producing animals

Sales trends by antibiotic class (mg/PCU) from 2010 to 2022^{1,2}



¹ Sales data sorted from highest to lowest in 2022.

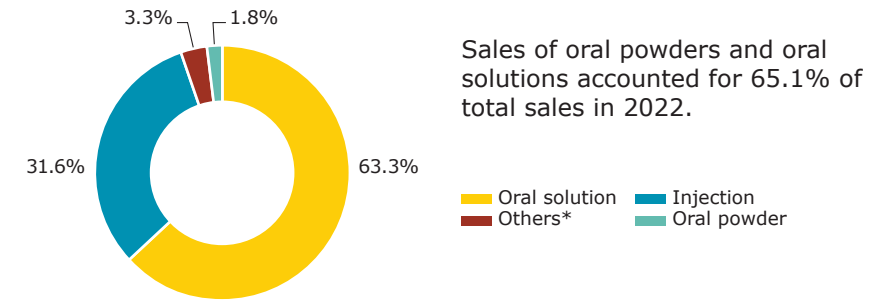
² No sales of other quinolones have been reported since 2011.

* The class 'Others' includes sales of bacitracin, novobiocin, rifaximin and spectinomycin (classified as other antibacterials in the ATCvet system).

Since 2011:

- ⬇️ 35.0% overall annual sales (from 70.5 mg/PCU to 45.8 mg/PCU in 2022)
- ⬇️ 16.3% 3rd- and 4th-generation cephalosporins sales (from 0.55 mg/PCU to 0.46 mg/PCU in 2022)
- ⬇️ 66.1% quinolones sales (from 2.3 mg/PCU to 0.79 mg/PCU in 2022)
- 100% of all quinolones sales for the period 2011–2022 were of fluoroquinolones
- ⬇️ 90.5% polymyxins sales (from 4.3 mg/PCU to 0.41 mg/PCU in 2022)
- ⬆️ PCU increased by 7.6% between 2011 and 2022

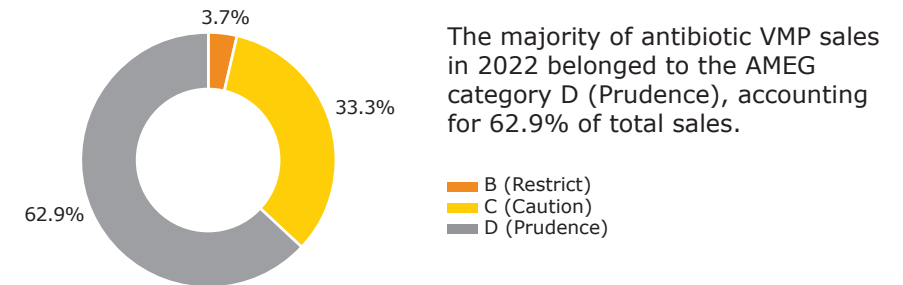
Proportion of sales (mg/PCU) by product form in 2022¹



¹ No sales of premixes and bolus reported in 2022.

* Other forms include intramammary, intrauterine and oral paste products.

Proportion of sales (mg/PCU) by AMEG categories in 2022



2022 sales data

In 2022, overall sales decreased by 1.7% in comparison to 2021 (from 46.6 mg/PCU to 45.8 mg/PCU). The three highest selling antibiotic classes were tetracyclines, penicillins and pleuromutilins, which accounted for 28.9%, 24.3% and 22.3% of total sales, respectively.



Country information

In Estonia, all wholesalers are required to report the sales of human and veterinary medicinal products to the State Agency of Medicines under the Medicinal Products Act of 2005. The Estonian State Agency of Medicines collects drug use data nationally for human and veterinary medicines at package level, covering 100% of the market. The data is analysed according to the WHO ATC/DDD and ATCvet methodology, as well as mg/PCU-methodology for veterinary medicines. In order to avoid double reporting caused by the inclusion of sales to other wholesalers, only sales from wholesalers to general, hospital and veterinary pharmacies and veterinarians are taken into account. The results are published on the website and in the Statistical Yearbook of the Estonian State Agency of Medicines each year.

The Estonian State Agency of Medicines analyses the sales of antibiotics used in both human and animal treatment, as well as the sales of human antibiotics for veterinary use. The total consumption of veterinary antibiotics has slightly decreased over the years, except for a significant increase in the year 2014. The restrictions during the pandemic (2020 and 2021) had a clear influence on the need for human antibiotics and the overall consumption of human antibiotics decreased remarkably. However, this decrease was temporary, and the consumption of human antibiotics increased in 2022 to pre-pandemic level. Contrarily, the pandemic had no significant impact on the consumption of veterinary antibiotics. Between 2006 and 2022, despite the number of registered veterinary antibiotics increasing over the years, the consumption of human antibiotics used in veterinary medicine has increased by the total quantity (the substance quantity deriving from human products in kilograms). In Estonia, based on 17 years of data, an average of 91 antimicrobial human products were sold to veterinarians annually in Estonia.

As Estonia is a small country, changes in the treatment strategy or outbreaks on one or two major farms may significantly influence sales patterns. For example, after a drastic increase in vaccination against E. coli strains since 2014, the overall colistin (polymyxins) use decreased remarkably.

The national action plan for the reduction of antimicrobial resistance is updated regularly. Since 2021, the use of antimicrobials is regulated with strong recommendations to avoid 3rd- and 4th-generation cephalosporins for the treatment of food-producing animals, and antimicrobial sensitivity testing prior use is mandatory.

Summary reports of consumption of antimicrobials and other veterinary medicines in Estonia are available on the websites below:

<https://www.ravimiamet.ee/en/statistics/statistics-veterinary-medicines>
<https://www.ravimiamet.ee/en/statistics/statistical-yearbooks>