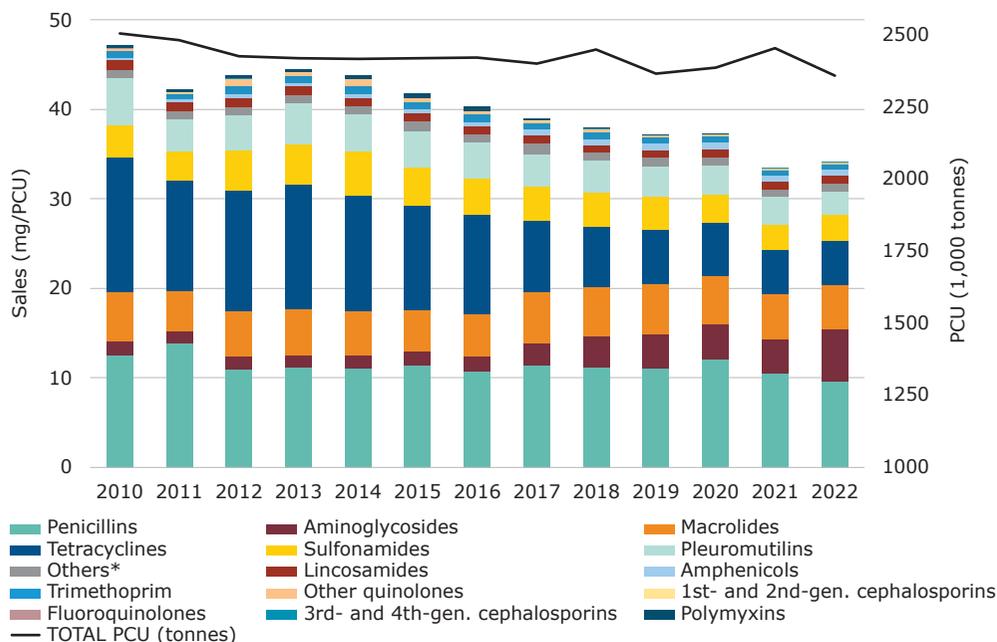


# Sales trends (mg/PCU) of antibiotic VMPs for food-producing animals

## Sales trends by antibiotic class (mg/PCU) from 2010 to 2022<sup>1</sup>



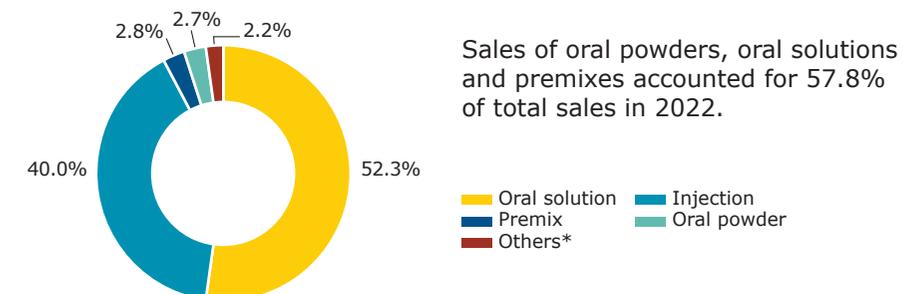
<sup>1</sup> Sales data sorted from highest to lowest in 2022.

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

### Since 2011:

- ↓ 19.2% overall annual sales (from 42.1 mg/PCU to 34.1 mg/PCU in 2022)
- ↓ 98.2% 3rd- and 4th-generation cephalosporin sales (from 0.03 mg/PCU to <0.01 mg/PCU in 2022)
- ↓ 67.7% fluoroquinolone sales (from 0.01 mg/PCU to <0.01 mg/PCU in 2022)
- ↑ 7.2% other quinolone sales (from 0.15 mg/PCU to 0.16 mg/PCU in 2022)
- ↓ 100% polymyxin sales (from 0.22 mg/PCU to 0 since 2021)
- ↓ PCU decreased by 5.0% between 2011 and 2022

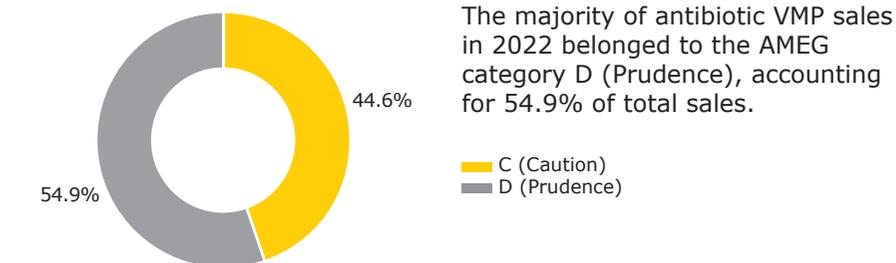
## Proportion of sales (mg/PCU) by product form in 2022



Sales of oral powders, oral solutions and premixes accounted for 57.8% of total sales in 2022.

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

## Proportion of sales (mg/PCU) by AMEG categories in 2022<sup>1</sup>



The majority of antibiotic VMP sales in 2022 belonged to the AMEG category D (Prudence), accounting for 54.9% of total sales.

<sup>1</sup> Sales of antibiotic classes belonging to the AMEG category B (Restrict) are not represented in the figure and accounted for 0.5% of total sales.

## 2022 sales data

In 2022, overall sales increased by 2% in comparison to 2021 (from 33.4 mg/PCU to 34.1 mg/PCU). The three highest selling antibiotic classes were penicillins, aminoglycosides and macrolides, which accounted for 28.4%, 17.0% and 14.6% of total sales, respectively.

## Country information

In 2022, a small reduction in the overall use of mg active compound (-2%) transformed into a rarely seen increase of 2% in mg/PCU due to a decrease in the food-producing animal population (-4% PCU). It is common that the population fluctuates due to meat prices and disease outbreaks around the world. The fluctuation in the Danish population between 2021 and 2022 was mostly driven by the pig industry. In 2022, the highest selling classes in Denmark were penicillins, aminoglycosides and macrolides. Beta-lactamase-sensitive penicillins accounted for 64% of all penicillin sales in 2022.

The most significant change in the use of antimicrobials in 2022 is due to stopping the use of zinc oxide as a treatment in pig production in June 2022. The increase in the use of oral treatment, as well as aminoglycosides substituting tetracyclines as the second most used class, is due to an increase in the treatment of weaner pigs. The first choice for treatment of intestinal tract disorders in weaner pigs is neomycin, but due to a fast development of resistance towards neomycin, the use of other aminoglycosides is increasing.

Historically, sales of fluoroquinolones have been low due to a strict regulation on the prescription of fluoroquinolones for food-producing animals enforced in 2002.

Sales of macrolides accounted for 14.6% of total sales in 2022. From 2011 (4.4 mg/PCU) to 2022 (5.0 mg/PCU), these increased by 12.7%. Approximately 94% of the macrolides sold (mostly tylosin) are used in pigs. Macrolides are used as a substitute for tetracyclines. In the updated 'Yellow card' initiative for pigs from 2016, the average daily dose (ADD) for tetracycline is multiplied by a factor of 1.5, where the class of macrolides does not have a multiplication factor.

The political target for reducing antimicrobial consumption in pigs set in 2018 aimed for an 8% reduction by the end of 2022. Consumption in pigs in 2022 decreased by 3.6% compared to 2018.