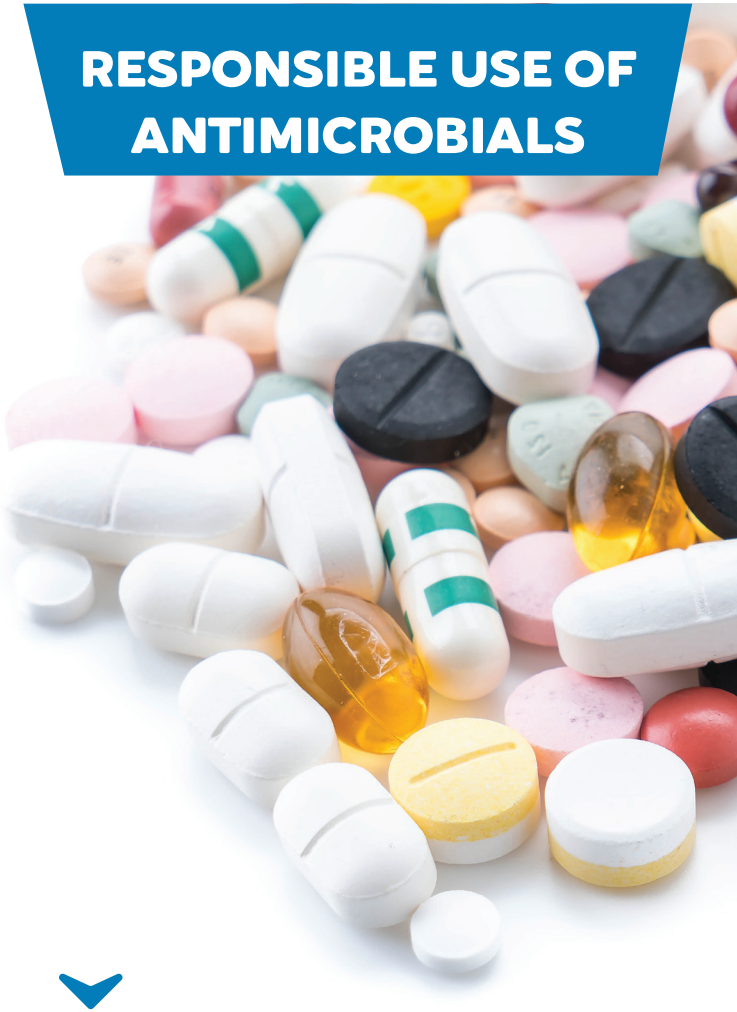
European Medicines Agency scientific advice to veterinarians on the categorisation of antibiotics when prescribing these medicines for animals in their care:

CATEGORY OF ANTIMICROBIALS	ANTIBIOTIC CLASS SUBCLASSES
Category A ("Avoid") includes antibiotics that are currently not authorised in veterinary medicine in the European Union (EU). These medicines may not be used in food-producing animals and may be given to individual companion animals only under exceptional circumstances.	Amdinopenicillins; Carbapenems; Other cephalosporinsand penems (ATC code J01DI), including combinations of 3rd-generation cephalosporins with beta-lactamase inhibitors; Glycopeptides; Glycylcyclines; Ketolides; Lipopeptides; Monobactams; Oxazolidinones linezolid; Penicillins: carboxypenicillins and ureidopenicillins, including combinations with beta-lactamase inhibitors piperacillin-tazobactam Phosphonic acid derivates; Pseudomonic acids; Rifamycins (except rifaximin); Riminofenazines clofazimine; Streptogramins Sulfones; Drugs used solely to treat tuberculosis or other mycobacterial diseases
Category B ("Restrict") refers to quinolones, 3rd- and 4th-generation cephalosporins and polymyxins. Antibiotics in this category are critically important in human medicine and their use in animals should be restricted to mitigate the risk to public health.	Cephalosporins: 3rd- and 4th-generation, except combinations with beta-lactamase inhibitors; Polymyxins; Quinolones: fluoroquinolones and other quinolones.
Category C ("Caution") covers antibiotics for which alternatives in human medicine generally exist in the EU, but only few alternatives are available for certain veterinary indications. These antibiotics should only be used when there are no antimicrobial substances in Category D that would be clinically effective.	Aminoglycosides (except spectinomycin); Aminopenicillins in combination with beta-lactamase inhibitors; Amphenicols; Cephalosporins: 1st- and 2nd-generation, and cephamycins; Macrolides (not including ketolides); Lincosamides; Pleuromutilins; Rifamycins: rifaximin only
Category D ("Prudence") includes antibiotics that should be used as first line treatments, whenever possible. These antibiotics can be used in animals in a prudent manner. This means that unnecessary use and long treatment periods should be avoided, and group treatment should be restricted to situations where individual treatment is not feasible.	Aminopenicillins, without beta-lactamase inhibitors; Cyclic polypeptides; Nitrofuran derivatives; Nitroimidazoles; Penicillins: Anti-staphylococcal penicillins (beta-lactamase-resistant penicillins); Penicillins: Natural, narrow spectrum penicillins (beta-lactamase-sensitive penicillins); Aminoglycosides: spectinomycin only; Steroid antibacterials; Sulfonamides, dihydrofolate reductase inhibitors and combinations; Tetracyclines

RESPONSIBLE USE OF ANTIMICROBIALS



RESPONSIBLE USE OF
ANTIMICROBIALS
AND ANTIMICROBIAL RESISTANCE IN VETERINARY MEDICINE

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EU FOOD SAFETY
AB GIDA GÜVENLİĞİ

ANTIMICROBIAL RESISTANCE (AMR)

occures when a microbe evolves to become more or fully resistant to antimicrobials which previously could treat it. Antimicrobials include antibiotics, which kill or inhibit the growth of bacteria.

Antimicrobial use in animals can contribute to the emergence of resistant bacteria that can be transferred to humans through the food chain or direct contact. The emerging and steady increase in the occurrence of bacteria that are resistant to multiple antibiotics has become a global public health threat due to the lack of therapeutic options to treat certain infections in humans.

AMR is responsible for an estimated

33,000

deaths per year in the EU.

It is also estimated that AMR costs the EU

€1.5 billion Euro

per year in healthcare costs and productivity losses

ANTIMICROBIAL MEDICINAL PRODUCTS IN VETERINARY MEDICINE SHALL NOT BE USED:

- Routinely;
- To compensate poor hygiene, inadequate animal husbandry or lack of care;
- To compensate poor farm management;
- In animals for the purpose of promoting growth nor to increase yield;
- For prophylaxis (prophylaxis means the administration of a medicinal product to an animal or group of animals before clinical signs of a disease, in order to prevent the occurrence of disease or infection).

Antimicrobials or groups of antimicrobials reserved for treatment of certain infections in humans

SHALL NOT BE USED

in veterinary medicinal products or medicated feed:

- **Antibiotics:** Carboxypenicillins; Ureidopenicillins; Ceftobiprole; Ceftaroline; Combinations of cephalosporins with beta lactamase inhibitors; Siderophore cephalosporins; Carbapenems; Penems; Monobactams; Phosphonic acid derivates; Glycopeptides; Lipopeptides; Oxazolidinones; Fidaxomicin; Plazomicin; Glycylcyclines; Eravacycline; Omadacycline
- **Antivirals:** Amantadine; Baloxavir marboxil; Celgosivir; Favipiravir; Galidesivir; Lactimidomycin Laninamivir; Methisazone/metisazone; Molnupiravir; Nitazoxanide; Oseltamivir; Peramivir; Ribavirin; Rimantadine; Tizoxanide; Triazavirin; Umifenovir; Zanamivir
- **Antiprotozoals:** Nitazoxanide