

DANMAP 2018

DANMAP 2018 - Use of antimicrobial agents and occurrence of antimicrobial resistance in bacteria from food animals, food and humans in Denmark



Criteria for the defining the DADDs for pigs, cattle and mink, DANMAP 2018

DANMAP reports usage of antimicrobials in different animal populations and in veterinary and human sectors. To allow for quantitative comparison in the different populations, the quantity of antimicrobials used, their potency, their formulation, the route of administration, and the age of the animals (where relevant) are accounted for by generating defined animal daily doses (DADDs).

The DADDs are defined for each antimicrobial agent, administration route, pharmaceutical formulation and animal species and when appropriate for each age group. The DADDs have been specifically defined for use in DANMAP and do not always completely match the “prescribed daily dose” or the recommended dosage in the Summaries of Product Characteristics (SPC) at <https://www.ema.europa.eu/en/medicines>.

The DADDs are based on the VetStat ADDs, but re-defined for DANMAP according to following principles:

1. Minor inconsistencies have been corrected e.g. due to rounding of numbers;
2. Approved dosage for the most widely used antimicrobial products is given priority above dosage for products that are rarely used;
3. Approved dosage for older products within the group is maintained as the common DADD even if a new product is approved with a higher dosage;
4. If the dosage for a group with large variation in approved dosages of the products, the dosages provided by “The Veterinary Formulary” [British Veterinary Association 2005, 6th edition] were applied;
5. Dosages may vary within active compound and administration route, if different dosages have been approved for different age group/indication or formulation.

When principle 3 and 4 are conflicting, principle 5 is applied.

The following tables list the DADDs, in mg active compound per kg body weight per treatment day, as applied in DANMAP 2018.

For products containing two or more active compounds, the number of DADDs are estimated for each active compound proportionally to the concentrations in the specific product. For some types of combination products, the ratio between active compounds may vary considerably. In these cases, the main antimicrobial component is given the DADD as in the most widely used similar combination products, and then the DADD for the second component is estimated using the ratio. This approach has been applied for products in ATC_{vet} groups QJ01RA01/ RV01 (benzylpenicillinprocain and dihydrostreptomycin), QJ01FF52 (lincomycin and spectinomycin) and QJ01EW10 (sulfadiazine and trimethoprim).

For each product listed in the VetStat, the dataset provided for DANMAP contains annual sum of active compound prescribed for each animal species by age groups and indication. Based on the total prescribed amount of active compound and the assigned DADDs for each specific product, the annual numbers of kg-doses are calculated as presented in the web annex, Tables A4.1 - A4.3.

DADD for pigs - DANMAP Defined Animal Daily Dose

DANMAP 2018

ATC _{vet} code	Active compound	Administration	Pharmaceutical form	DADD mg/kg
QA07AA01	Neomycin	Peroralt	Soluble powder	16,7
	Neomycin	Peroralt	Solution	85,0
QA07AA06	Paromomycin	Peroralt	Soluble powder	22,8
	Paromomycin	Peroralt	Oral solution	22,8
QA07AA10	Colistin	Peroralt	Soluble powder	3,3
	Colistin	Peroralt	Oral solution	3,3
QA07AA90	Dihydrostreptomycin	Peroralt	Soluble Tablet	25,0
QA07AA91	Gentamicinsulfat	Peroralt	Oral powder	2,0
QA07AA92	Apramycin	Peroralt	Premix	5,0
	Apramycin	Peroralt	Soluble powder	10,0
	Apramycin	Peroralt	Oral powder	5,0
QD06BA04	Sulfamethizol	Peroralt	Oral powder	21,0
QJ01BA90	Florfenicol	Parenteralt	Injection	7,5
	Florfenicol	Peroralt	Solution	10,0
	Florfenicol	Peroralt	Oral solution	10,0
	Florfenicol	Peroralt	Oral powder	10,0
QJ01BA99	Florfenicol	Parenteralt	Injection	7,5
QJ01CA01	Ampicillin	Parenteralt	Injection	15,0
QJ01CA04	Amoxicillin	Parenteralt	Injection	15,0
	Amoxicillin	Peroralt	Premix	15,0
	Amoxicillin	Peroralt	Soluble powder	17,5
	Amoxicillin	Peroralt	Oral powder	15,0
QJ01CE02	Phenoxymethylpenicillin	Peroralt	Soluble powder	10,0
QJ01CE09	Benzylpenicillinprocain	Parenteralt	Injection	15,0
QJ01CE90	Benzylpenicillin	Parenteralt	Injection	8,9
QJ01CR02	Amoxicillin	Parenteralt	Injection	7,0
	Clavulansyre	Parenteralt		1,8
	Amoxicillin	Peroralt	Boli	20,0
	Clavulansyre	Peroralt		5,0
	Amoxicillin	Peroralt	Soluble powder	20,0
QJ01DD90	Clavulansyre	Peroralt		5,0
	Ceftiofur	Parenteralt	Injection	3,0
	Ceftiofur	Parenteralt	Injection, prolonged	1,0
	Cefquinom	Parenteralt	Injection	2,0
QJ01DE90	Cefquinom	Parenteralt	Injection	2,0
QJ01EW10	Sulfadiazin	Parenteralt	Injection	13,4
	Trimethoprim	Parenteralt		2,7
	Sulfadiazin	Peroralt	Boli	25,0
	Trimethoprim	Peroralt		5,0
	Sulfadiazin	Peroralt	Premix	25,0
	Trimethoprim	Peroralt		5,0
	Sulfadiazin	Peroralt	Oral powder	25,0
QJ01EW11	Trimethoprim	Peroralt		5,0
	Sulfametoxazol	Peroralt	Oral solution	21,0
QJ01EW13	Trimethoprim	Peroralt		4,2
	Sulfadoxin	Parenteralt	Injection	13,4
QJ01EW14	Trimethoprim	Parenteralt		2,7
	Sulfatroxazol	Parenteralt	Injection	13,4
QJ01FA02	Trimethoprim	Parenteralt		2,7
	Spiramycin	Parenteralt	Injection	10,0

DADD for pigs - DANMAP Defined Animal Daily Dose

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DANMAP 2018

ATCvet code	Active compound	Administration	Pharmaceutical form	DADD mg/kg
QJ01FA90	Tylosin	Parenteralt	Injection	6,6
	Tylosin	Peroralt	Premix	4,0
	Tylosin	Peroralt	Soluble powder	8,3
	Tylosin	Peroralt	Oral powder	4,0
QJ01FA91	Tilmicosin	Peroralt	Premix	16,0
	Tilmicosin	Peroralt	Oral solution	16,0
	Tilmicosin	Peroralt	Oral powder	16,0
QJ01FA92	Acetylisovaleryltylosin	Peroralt	Premix	4,3
	Acetylisovaleryltylosin	Peroralt	Soluble powder	5,0
	Acetylisovaleryltylosin	Peroralt	Oral powder	4,3
QJ01FA94	Tulathromycin	Parenteralt	Injection	0,5
QJ01FA95	gamithromycin	Parenteralt	Injection	1,2
QJ01FA96	Tildipirosin	Parenteralt	Injection	0,8
QJ01FF02	Lincomycin	Parenteralt	Injection	10,0
	Lincomycin	Peroralt	Premix	5,0
	Lincomycin	Peroralt	Soluble powder	10,0
QJ01FF52	Lincomycin	Parenteralt	Injection	7,5
	Spectinomycin	Parenteralt		15,0
	Lincomycin	Peroralt	Premix	2,5
	Spectinomycin	Peroralt		2,5
	Lincomycin	Peroralt	Soluble powder	3,3
	Spectinomycin	Peroralt		6,6
	Lincomycin	Peroralt	Oral powder	2,5
Spectinomycin	Peroralt		2,5	
QJ01GB03	Gentamicin	Peroralt	Solution	2,5
QJ01MA90	Enrofloxacin	Parenteralt	Injection	3,7
	Enrofloxacin	Peroralt	Mixture	3,8
QJ01MA93	Marbofloxacin	Parenteralt	Injection	2,0
QJ01RA01	Benzylpenicillinprocain	Parenteralt	Injection	10,0
	Dihydrostreptomycin	Parenteralt		10,0
	Dihydrostreptomycin	Parenteralt		12,5
QJ01RV01	Benzylpenicillinprocain	Parenteralt	Injection	10,0
	Dihydrostreptomycin	Parenteralt		12,5
QJ01XQ01	Tiamulin	Parenteralt	Injection	10,9
	Tiamulin	Peroralt	Premix	5,0
	Tiamulin	Peroralt	Soluble powder	7,0
	Tiamulin	Peroralt	Oral solution	7,0
	Tiamulin	Peroralt	Oral powder	5,0
QJ01XQ02	Valnemulin	Peroralt	Premix	3,5
	Valnemulin	Peroralt	Oral powder	3,5
QJ01AA02	Doxycyclin	Peroralt	Premix	12,5
	Doxycyclin	Peroralt	Soluble powder	12,5
	Doxycyclin	Peroralt	Oral solution	12,5
	Doxycyclin	Peroralt	Oral powder	12,5
QJ01AA03	Chlortetracyclin	Peroralt	Oral powder	20,0
QJ01AA06	Oxytetracyclin	Parenteralt	Injection	7,5
	Oxytetracyclin	Peroralt	Soluble powder	20,0
QP51AG04	Sulfaclozin	Peroralt	Soluble powder	36,0

DADD for cattle - DANMAP Defined Animal Daily Dose

DANMAP 2018

ATC _{vet} code	Active compound	Administration	Pharmaceutical	DADD mg/kg
QA07AA01	Neomycin	Peroralt	Soluble powder	16,7
	Neomycin	Peroralt	Solution	30,0
QA07AA06	Paromomycin	Peroralt	Oral solution	26,3
	Paromomycin	Peroralt	Soluble powder	26,3
QA07AA10	Colistin	Peroralt	Oral solution	3,3
	Colistin	Peroralt	Soluble powder	3,3
QA07AA92	Apramycin	Peroralt	Oral powder	13,5
	Apramycin	Peroralt	Premix	13,5
	Apramycin	Peroralt	Soluble powder	30,0
QJ01BA90	Florfenicol	Parenteralt	Injection	10,0
	Florfenicol	Peroralt	Oral powder	10,0
	Florfenicol	Peroralt	Oral solution	10,0
	Florfenicol	Peroralt	Solution	10,0
QJ01BA99	Florfenicol	Parenteralt	Injection	10,0
QJ01CA01	Ampicillin	Parenteralt	Injection	15,0
QJ01CA04	Amoxicillin	Parenteralt	Injection	15,0
	Amoxicillin	Peroralt	Oral powder	15,0
	Amoxicillin	Peroralt	Premix	15,0
	Amoxicillin	Peroralt	Soluble powder	17,5
QJ01CE01	Benzylpenicillinkalium	Parenteralt	Injection	9,4
QJ01CE09	Benzylpenicillinprocain	Parenteralt	Injection	15,0
QJ01CE90	Benzylpenicillin	Parenteralt	Injection	8,9
QJ01CR02	Amoxicillin	Parenteralt	Injection	7,0
	Clavulansyre	Parenteralt	Injection	1,8
	Amoxicillin	Peroralt	Boli	20,0
	Clavulansyre	Peroralt	Boli	5,0
	Amoxicillin	Peroralt	Soluble powder	20,0
	Clavulansyre	Peroralt	Soluble powder	5,0
QJ01DD90	Ceftiofur	Parenteralt	Injection	1,0
QJ01DE90	Cefquinom	Parenteralt	Injection	1,5
QJ01EW03	Baquiloprim	Peroralt	Boli	4,8
	Sulfadimidin	Peroralt	Boli	43,2
QJ01EW10	Sulfadiazin	Parenteralt	Injection	13,4
	Trimethoprim	Parenteralt	Injection	2,7
	Sulfadiazin	Peroralt	Boli	25,0
	Trimethoprim	Peroralt	Boli	5,0
	Sulfadiazin	Peroralt	Oral powder	25,0
	Trimethoprim	Peroralt	Oral powder	5,0
	Sulfadiazin	Peroralt	Premix	25,0
	Trimethoprim	Peroralt	Premix	5,0
QJ01EW11	Trimethoprim	Peroralt	Oral solution	4,0
	Sulfametoxazol	Peroralt	Oral solution	20,0
QJ01EW13	Sulfadoxin	Parenteralt	Injection	13,4
	Trimethoprim	Parenteralt	Injection	2,7
QJ01EW14	Sulfatroxazol	Parenteralt	Injection	13,4
	Trimethoprim	Parenteralt	Injection	2,7
QJ01FA02	Spiramycin	Parenteralt	Injection	10,0
QJ01FA90	Tylosin	Parenteralt	Injection	6,6
	Tylosin	Peroralt	Oral powder	4,0
	Tylosin	Peroralt	Premix	4,0
	Tylosin	Peroralt	Soluble powder	20,0

DADD for cattle - DANMAP Defined Animal Daily Dose

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ATC _{vet} code	Active compound	Administration	Pharmaceutical	DADD mg/kg
QJ01FA91	Tilmicosin	Peroralt	Oral powder	16,0
	Tilmicosin	Peroralt	Oral solution	25,0
	Tilmicosin	Peroralt	Premix	16,0
QJ01FA92	Acetylisovaleryltylosin	Peroralt	Oral powder	4,3
	Acetylisovaleryltylosin	Peroralt	Premix	4,3
QJ01FA94	Tulathromycin	Parenteralt	Injection	0,5
QJ01FA95	Gamithromycin	Parenteralt	Injection	1,2
QJ01FA96	Tildipirosin	Parenteralt	Injection	0,8
QJ01FF02	Lincomycin	Parenteralt	Injection	10,0
	Lincomycin	Peroralt	Premix	5,0
	Lincomycin	Peroralt	Soluble powder	10,0
QJ01FF52	Lincomycin	Parenteralt	Injection	7,5
	Spectinomycin	Parenteralt	Injection	15,0
	Lincomycin	Peroralt	Premix	2,5
	Spectinomycin	Peroralt	Premix	2,5
	Lincomycin	Peroralt	Soluble powder	3,3
	Spectinomycin	Peroralt	Soluble powder	6,6
QJ01GB03	Gentamicin	Peroralt	Solution	2,5
QJ01MA90	Enrofloxacin	Parenteralt	Injection	3,7
	Enrofloxacin	Peroralt	Mixture	3,8
QJ01MA92	Danofloxacin	Parenteralt	Injection	1,9
QJ01MA93	Marbofloxacin	Parenteralt	Injection	2,0
QJ01RA01	Benzylpenicillinprocain	Parenteralt	Injection	10,0
	Dihydrostreptomycin	Parenteralt	Injection	10,0
	Dihydrostreptomycin	Parenteralt	Injection	12,5
QJ01RV01	Benzylpenicillinprocain	Parenteralt	Injection	10,0
	Dihydrostreptomycin	Parenteralt	Injection	12,5
QJ01XQ01	Tiamulin	Parenteralt	Injection	10,9
	Tiamulin	Peroralt	Oral powder	5,0
	Tiamulin	Peroralt	Oral solution	7,0
	Tiamulin	Peroralt	Soluble powder	7,0
QJ01AA02	Doxycyclin	Peroralt	Oral powder	12,5
	Doxycyclin	Peroralt	Soluble powder	12,5
QJ01AA03	Chlortetracyclin	Peroralt	Oral powder	20,0
QJ01AA06	Oxytetracyclin	Parenteralt	Injection	7,5
	Oxytetracyclin	Peroralt	Soluble powder	25,0

DADD for mink - DANMAP Defined Animal Daily Dose

				DANMAP 2018
ATC _{vet} code	Active compound	Administration	Pharmaceutical form	DADD mg/kg
QA07AA01	Neomycin	Peroral	Soluble powder	14,0
	Neomycin	Peroral	Solution	14,0
QA07AA06	Paromomycin	Peroral	Soluble powder	28,0
QA07AA10	Colistin	Peroral	Soluble powder	5,0
QA07AA90	Dihydrostreptomycin	Peroral	Soluble Tablet	25,0
QA07AA92	Apramycin	Peroral	Oral powder	5,0
	Apramycin	Peroral	Soluble powder	9,2
QJ01BA90	Florfenicol	Parenteral	Injection	15,0
	Florfenicol	Peroral	Soluble powder	15,0
	Florfenicol	Peroral	Solution	15,0
QJ01BA99	Florfenicol	Parenteral	Injection	15,0
QJ01CA01	Ampicillin	Parenteral	Injection	15,0
QJ01CA04	Amoxicillin	Parenteral	Injection	17,5
	Amoxicillin	Peroral	Premix	20,0
	Amoxicillin	Peroral	Soluble powder	20,0
QJ01CE02	Phenoxymethylpenicillin	Peroral	Soluble powder	10,0
QJ01CE09	Benzylpenicillinprocain	Parenteral	Injection	20,0
QJ01CE90	Benzylpenicillin	Parenteral	Injection	8,9
QJ01CR02	Amoxicillin	Parenteral	Injection	7,0
	Clavulansyre	Parenteral		1,8
	Amoxicillin	Peroral	Boli	20,0
	Clavulansyre	Peroral		5,0
	Amoxicillin	Peroral	Soluble powder	20,0
QJ01DD90	Clavulansyre	Peroral		5,0
	Ceftiofur	Parenteral	Injection	3,0
QJ01DD91	Cefovecin	Parenteral	Injection	8,0
QJ01DE90	Cefquinom	Parenteral	Injection	2,0
QJ01EW10	Sulfadiazin	Parenteral	Injection	13,4
	Trimethoprim	Parenteral		2,7
	Sulfadiazin	Peroral	Oral powder	25,0
	Trimethoprim	Peroral		5,0
	Sulfadiazin	Peroral	Premix	25,0
QJ01EW11	Trimethoprim	Peroral		5,0
	Sulfametoxazol	Peroral	Soluble powder	25,0
QJ01EW13	Sulfadoxin	Parenteral	Injection	13,4
	Trimethoprim	Parenteral		2,7
QJ01FA02	Spiramycin	Parenteral	Injection	6,6
QJ01FA90	Tylosin	Parenteral	Injection	6,6
	Tylosin	Peroral	Oral powder	10,0
	Tylosin	Peroral	Premix	10,0
	Tylosin	Peroral	Soluble powder	10,0
QJ01FA91	Tilmicosin	Peroral	Soluble powder	16,0
QJ01FA92	Acetylisovaleryltylosin	Peroral	Soluble powder	5,0

DADD for mink - DANMAP Defined Animal Daily Dose

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DANMAP 2018

ATC _{vet} code	Active compound	Administration	Pharmaceutical form	DADD mg/kg
QJ01FA94	Tulathromycin	Parenteral	Injection	0,5
QJ01FA95	Gamithromycin	Parenteral	Injection	3,0
QJ01FA96	Tildipirosin	Parenteral	Injection	1,0
QJ01FF02	Lincomycin	Parenteral	Injection	10,0
	Lincomycin	Peroral	Premix	5,0
	Lincomycin	Peroral	Soluble powder	10,0
QJ01FF52	Lincomycin	Parenteral	Injection	7,5
	Spectinomycin	Parenteral		15,0
	Lincomycin	Peroral	Premix	2,5
	Spectinomycin	Peroral		2,5
	Lincomycin	Peroral	Soluble powder	3,3
	Spectinomycin	Peroral		6,7
QJ01GB03	Gentamicin	Peroral	Solution	2,5
QJ01MA90	Enrofloxacin	Parenteral	Injection	5,0
QJ01RA01	Benzylpenicillinprocain	Parenteral	Injection	10,0
	Dihydrostreptomycin	Parenteral		10,0
	Dihydrostreptomycin	Parenteral		12,5
QJ01RV01	Benzylpenicillinprocain	Parenteral	Injection	10,0
	Dihydrostreptomycin	Parenteral		12,5
QJ01XQ01	Tiamulin	Parenteral	Injection	10,9
	Tiamulin	Peroral	Oral powder	5,0
	Tiamulin	Peroral	Premix	5,0
	Tiamulin	Peroral	Soluble powder	7,0
QJ01AA02	Doxycyclin	Peroral	Oral powder	10,0
	Doxycyclin	Peroral	Premix	10,0
	Doxycyclin	Peroral	Soluble powder	10,0
QJ01AA03	Chlortetracyclin	Peroral	Oral powder	25,0
QJ01AA06	Oxytetracyclin	Parenteral	Injection	7,5
	Oxytetracyclin	Peroral	Soluble powder	50,0
QP51AG04	Sulfaclozin	Peroral	Soluble powder	36,0