

Percent of Microorganisms Resistant to Selected Antibiotics for 2002

Antibiotic	Canine										Equine										Feline									
	E. Coli		Enterococcus sp.		Pse. aeruginosa		Staph. aureus		Staph. intermedius		E. Coli		Salmonella sp.		Staph. aureus		Staph. epidermidis		Strep. equi		Strep. zooepidemicus		E. Coli		Enterococcus sp.		Pse. aeruginosa		Staph. aureus	
	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.
Amikacin	1	1	18	38	0	2	0	4	0	0	0	0	0	0	0	0	0	71	100	65	100	0	0	0	71	0	0	0	0	
Amoxycillin/Clauvulinic acid	24	18	9	19	93	95	31	4	0	2	8	27	25	20	43	50	38	0	0	0	0	11	14	33	43	100	100	0	0	
Ampicillin	48	48	9	23	100	95	54	46	44	42	36	50	25	40	71	50	38	50	0	0	0	5	44	38	33	43	100	100	100	33
Cefazolin	23	18	64	62	100	98	23	4	0	0	12	27	25	20	43	50	25	0	0	0	5	0	10	100	100	100	100	0	0	
Cefotaxime	13	7	9	33	7	10	23	4	0	0	0	0	0	0	43	50	25	0	0	0	5	0	5	33	57	0	20	0	0	
Cefoxitin	24	17	91	81	100	95	23	4	0	0	8	19	25	20	43	50	25	0	0	0	5	0	0	67	86	100	100	0	0	
Ceftiofur	20	16	73	82	100	98	23	4	0	0	0	12	13	20	57	50	25	0	0	0	5	0	5	100	100	100	80	0	0	
Cephalothin	17	23	36	57	100	95	23	4	0	0	12	31	25	20	43	50	25	0	0	0	5	22	19	67	86	100	100	0	0	
Chloramphenicol	15	16	0	0	67	80	0	0	3	0	4	38	13	40	0	0	13	0	0	0	0	0	5	33	0	67	60	0	0	
Ciprofloxacin	16	16	0	10	13	17	15	8	3	2	4	4	0	0	14	0	13	0	0	0	0	6	10	0	43	0	0	0	67	
Clindamycin	99	100	82	86	100	95	0	8	15	9	100	100	100	100	0	0	0	0	14	0	5	100	100	100	86	100	100	0	0	
Enrofloxacin	16	18	27	45	27	55	15	17	3	2	4	4	0	0	14	0	13	0	0	0	0	6	14	33	57	0	40	50	67	
Erythromycin	99	100	0	23	100	95	8	17	15	9	100	100	100	100	29	50	0	50	14	0	5	100	100	67	43	100	100	0	0	
Gentamicin 500 microgm/ml	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	50	0	
Gentamicin	9	11	9	32	0	10	8	1	3	0	16	31	0	0	14	50	0	0	0	100	20	55	0	19	67	57	0	0	0	0
Sulphadimethoxine/Ormetoprim	29	29	0	10	100	95	8	13	15	9	40	62	0	40	43	50	13	50	0	0	5	11	19	0	14	100	100	0	0	
Oxacillin + 2% NaCl	99	100	91	76	93	95	23	4	0	0	100	100	100	100	43	50	0	0	0	0	0	100	100	100	86	100	100	0	0	
Penicillin	99	100	9	27	100	98	46	42	44	38	100	100	100	100	71	50	25	50	0	0	5	100	100	33	43	100	100	100	33	
Rifampin	97	97	36	33	100	95	0	0	0	0	100	100	100	100	0	0	25	0	0	0	0	94	100	33	29	100	100	0	0	
Tetracycline	31	33	36	52	33	27	8	17	12	16	36	42	13	20	29	50	0	50	0	0	30	50	17	24	100	86	33	40	50	0
Ticarcillin	43	42	18	24	13	7	46	42	44	38	32	42	13	20	71	50	38	50	0	0	5	33	29	33	71	0	40	100	33	
Tribrissen	29	29	0	10	33	29	15	42	32	47	40	62	0	40	43	50	25	50	0	0	9	11	14	0	14	33	40	0	0	
Vancomycin	99	100	0	10	100	98	0	0	3	0	100	100	100	100	0	0	13	0	0	0	0	100	100	0	0	100	100	0	0	
Number of isolates	74	90	11	21	15	41	13	24	33	45	25	26	8	5	7	2	7	2	7	1	20	22	18	21	3	7	3	5	3	3

Percent of Micro-organisms that are Resistance to Selected Antibiotics for 2002

Antibiotic	Beef								Dairy						Swine							
	E. coli		Past. Haemolitica		Past. Multocida		Salmonella sp.		E. coli		Staph. aureus		Salmonella sp.		APP		E. coli		Salmonella sp.		Strep. suis	
	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.	Jan.-June	July-Dec.
Ampicillin	49	46	0	0	0	0	29	43	56	62	63	17	66	80	15	6	64	64	53	41	1	3
Apramycin	7	12	20	22	40	67	0	29	39	35	na	na	21	26	2	13	21	20	10	9	33	41
Ceftiofur	20	19	0	0	0	0	29	43	25	26	4	0	45	50	2	0	8	10	8	6	7	8
Chlortetracycline	74	69	20	0	0	0	57	43	74	91	na	na	66	85	11	10	99	86	84	76	90	96
Clindamycin	100	100	100	100	100	100	100	100	94	97	na	na	97	100	8	19	99	100	100	100	89	82
Enrofloxacin	14	12	0	0	0	0	0	0	20	12	na	na	0	0	2	0	0	0	0	0	2	3
Erythromycin	100	100	20	0	60	0	100	100	95	98	na	0	97	100	0	3	99	99	100	100	91	80
Florphenicol	100	100	20	11	60	0	100	100	94	98	na	na	97	98	2	0	99	95	96	97	68	67
Gentamicin	19	27	20	0	60	0	0	29	53	59	na	na	24	35	2	0	19	21	10	15	2	5
Neomycin	31	42	80	44	80	67	43	43	65	71	na	na	59	67	9	3	46	43	24	15	60	63
Oxytetracycline	76	69	40	33	60	50	57	43	74	92	na	na	66	85	32	35	99	88	84	76	92	97
Penicillin	100	100	20	44	0	17	100	100	95	98	33	17	97	100	72	90	99	100	100	100	8	12
Sulphadimethoxine	69	58	60	44	60	83	57	57	64	73	70	92	76	83	15	10	74	71	66	71	63	62
Spectinomycin	36	38	40	78	80	50	86	100	63	76	na	na	66	93	13	0	65	55	90	100	19	29
Sulphachloropyridazine	69	58	20	11	80	83	57	43	75	89	na	na	79	83	25	35	74	72	64	68	66	60
Sulphathiazole	69	58	80	56	80	83	57	43	76	89	na	na	79	83	21	23	75	73	64	68	67	65
Tiamulin	100	100	100	78	60	83	100	100	93	98	na	na	97	100	15	0	99	100	100	100	22	25
Tilmicosin	98	100	0	0	60	0	100	100	92	96	na	na	97	100	4	0	98	98	100	100	88	77
Triple Sulfa	38	42	20	0	0	0	0	43	57	61	na	na	28	37	2	0	14	18	12	12	3	6
Tylosin	100	100	100	89	60	83	100	100	94	98	na	na	97	100	na	na	99	100	100	100	na	na
number of isolates	67	26	5	9	5	6	7	7	112	85	27	12	26	46	53	31	188	96	51	34	123	117

Jan. 1 - June 30, 2002

Antibiotic Resistance (%)	Canine					Equine						Feline			
	E. Coli	Enterococcus sp.	Pse. aeruginosa	Staph. aureus	Staph. intermedius	E. Coli	Salmonella sp.	Staph. aureus	Staph. epidermidis	Strep. equi	Strep. zooepidemicus	E. Coli	Enterococcus sp.	Pse. aeruginosa	Staph. aureus
Amikacin	1	18	0	0	0	0	0	0	0	71	65	0	0	0	0
Amoxycillin/Clauvulinic acid	24	9	93	31	0	8	25	43	38	0	0	11	33	100	0
Ampicillin	48	9	100	54	44	36	25	71	38	0	0	44	33	100	100
Cefazolin	23	64	100	23	0	12	25	43	25	0	0	0	100	100	0
Cefotaxime	13	9	7	23	0	0	0	43	25	0	0	0	33	0	0
Cefoxitin	24	91	100	23	0	8	25	43	25	0	0	0	67	100	0
Ceftiofur	20	73	100	23	0	0	13	57	25	0	0	0	100	100	0
Cephalothin	17	36	100	23	0	12	25	43	25	0	0	22	67	100	0
Chloramphenicol	15	0	67	0	3	4	13	0	13	0	0	0	33	67	0
Ciprofloxacin	16	0	13	15	3	4	0	14	13	0	0	6	0	0	0
Clindamycin	99	82	100	0	15	100	100	0	0	14	0	100	100	100	0
Enrofloxacin	16	27	27	15	3	4	0	14	13	0	0	6	33	0	50
Erythromycin	99	0	100	8	15	100	100	29	0	14	0	100	67	100	0
Gentamicin 500 microgm/ml	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
Gentamicin	9	9	0	8	3	16	0	14	0	0	20	0	67	0	0
Sulphadimethoxine/Ormetoprim	29	0	100	8	15	40	0	43	13	0	0	11	0	100	0
Oxacillin + 2% NaCl	99	91	93	23	0	100	100	43	0	0	0	100	100	100	0
Penicillin	99	9	100	46	44	100	100	71	25	0	0	100	33	100	100
Rifampin	97	36	100	0	0	100	100	0	25	0	0	94	33	100	0
Tetracycline	31	36	33	8	12	36	13	29	0	0	30	17	100	33	50
Ticarillin	43	18	13	46	44	32	13	71	38	0	0	33	33	0	100
Tribissen	29	0	33	15	32	40	0	43	25	0	0	11	0	33	0
Vancomycin	99	0	100	0	3	100	100	0	13	0	0	100	0	100	0
number of isolets	74	11	15	13	33	25	8	7	7	7	20	18	3	3	3

Antibiotic Resistance (%)	E. Coli	Past. Haemolitica	Past. Multocida	Salmonella sp.	E. Coli	Staph. aureus	Salmonella sp.	APP	E. coli	Salmonella sp.	Strep. suis 1-10
Ampicillin	49	0	0	29	56	63	66	15	64	53	1
Apramycin	7	20	40		39	na	21	2	21	10	33
Ceftiofur	20	0	0	29	25	4	45	2	8	8	7
Chlortetracycline	74	20	0	57	74	na	66	11	99	84	90
Clindamycin	100	100	100	100	94	na	97	8	99	100	89
Enrofloxacin	14	0	0	0	20	na	0	2	0	0	2
Erythromycin	100	20	60	100	95	na	97	0	99	100	91
Florphenicol	100	20	60	100	94	na	97	2	99	96	68
Gentamicin	19	20	60	0	53	na	24	2	19	10	2
Neomycin	31	80	80	43	65	na	59	9	46	24	60
Oxytetracycline	76	40	60	57	74	na	66	32	99	84	92
Penicillin	100	20	0	100	95	33	97	72	99	100	8
Sulphadimethoxine	69	60	60	57	64	70	76	15	74	66	63
Spectinomycin	36	40	80	86	63	na	66	13	65	90	19
Sulphachloropyridazine	69	20	80	57	75	na	79	25	74	64	66
Sulphathiazole	69	80	80	57	76	na	79	21	75	64	67
Tiamulin	100	100	60	100	93	na	97	15	99	100	22
Tilmicosin	98	0	60	100	92	na	97	4	98	100	88
Triple Sulfa	38	20	0	0	57	na	28	2	14	12	3
Tylosin	100	100	60	100	94	na	97	na	99	100	na
number of isolates	67	5	5	7	112	27	26	53	188	51	123

Antibiotic Resistance (%)	Canine					Equine						Feline			
	E. Coli	Enterococcus sp.	Pse. aeruginosa	Staph. aureus	Staph. intermedius	E. Coli	Salmonella sp.	Staph. aureus	Staph. epidermidis	Strep. equi	Strep. zooepidemicus	E. Coli	Enterococcus sp.	Pse. aeruginosa	Staph. aureus
Amikacin	1	38	2	4	0	0	0	0	0	100	100	0	71	0	0
Amoxycillin/Clauvulinic acid	18	19	95	4	2	27	20	50	0	0	0	14	43	100	0
Ampicillin	48	23	95	46	42	50	40	50	50	0	5	38	43	100	33
Cefazolin	18	62	98	4	0	27	20	50	0	0	5	10	100	100	0
Cefotaxime	7	33	10	4	0	0	0	50	0	0	5	5	57	20	0
Cefoxitin	17	81	95	4	0	19	20	50	0	0	5	0	86	100	0
Ceftiofur	16	82	98	4	0	12	20	50	0	0	5	5	100	80	0
Cephalothin	23	57	95	4	0	31	20	50	0	0	5	19	86	100	0
Chloramphenicol	16	0	80	0	0	38	40	0	0	0	0	5	0	60	0
Ciprofloxacin	16	10	17	8	2	4	0	0	0	0	0	10	43	0	67
Clindamycin	100	86	95	8	9	100	100	0	0	0	5	100	86	100	0
Enrofloxacin	18	45	55	17	2	4	0	0	0	0	0	14	57	40	67
Erythromycin	100	23	95	17	9	100	100	50	50	0	5	100	43	100	0
Gentamicin 500 microgm/ml	1	0	0	0	0	0	0	0	0	0	0	0	14	0	0
Gentamicin	11	32	10	1	0	31	0	50	0	100	55	19	57	0	0
Sulphadimethoxine/Ormetoprim	29	10	95	13	9	62	40	50	50	0	5	19	14	100	0
Oxacillin + 2% NaCl	100	76	95	4	0	100	100	50	0	0	0	100	86	100	0
Penicillin	100	27	98	42	38	100	100	50	50	0	5	100	43	100	33
Rifampin	97	33	95	0	0	100	100	0	0	0	0	100	29	100	0
Tetracycline	33	52	27	17	16	42	20	50	50	0	50	24	86	40	0
Ticarillin	42	24	7	42	38	42	20	50	50	0	5	29	71	40	33
Tribissen	29	10	29	42	47	62	40	50	50	0	9	14	14	40	0
Vancomycin	100	10	98	0	0	100	100	0	0	0	0	100	0	100	0
number of isolets	90	21	41	24	45	26	5	2	2	1	22	21	7	5	3

Jul. 1 - Dec. 31, 2002	Beef				Dairy			Swine			
Antibiotic Resistance (%)	E. Coli	Past. Haemolitica	Past. Multocida	Salmonella sp.	E. Coli	Staph. aureus	Salmonella sp.	APP	E. coli	Salmonella sp.	Strep. suis
Ampicillin	46	0	0	43	62	17	80	6	64	41	3
Apramycin	12	22	67	29	35	na	26	13	20	9	41
Ceftiofur	19	0	0	43	26	0	50	0	10	6	8
Chlortetracycline	69	0	0	43	91	na	85	10	86	76	96
Clindamycin	100	100	100	100	97	na	100	19	100	100	82
Enrofloxacin	12	0	0	0	12	na	0	0	0	0	3
Erythromycin	100	0	0	100	98	0	100	3	99	100	80
Florphenicol	100	11	0	100	98	na	98	0	95	97	67
Gentamicin	27	0	0	29	59	na	35	0	21	15	5
Neomycin	42	44	67	43	71	na	67	3	43	15	63
Oxytetracycline	69	33	50	43	92	na	85	35	88	76	97
Penicillin	100	44	17	100	98	17	100	90	100	100	12
Sulphadimethoxine	58	44	83	57	73	92	83	10	71	71	62
Spectinomycin	38	78	50	100	76	na	93	0	55	100	29
Sulphachloropyridazine	58	11	83	43	89	na	83	35	72	68	60
Sulphathiazole	58	56	83	43	89	na	83	23	73	68	65
Tiamulin	100	78	83	100	98	na	100	0	100	100	25
Tilmicosin	100	0	0	100	96	na	100	0	98	100	77
Triple Sulfa	42	0	0	43	61	na	37	0	18	12	6
Tylosin	100	89	83	100	98	na	100	na	100	100	na
number of isolates	26	9	6	7	85	12	46	31	96	34	117