

Table 10a. Antimicrobial Resistance among *Salmonella* Typhimurium^a Isolates from Food Animals, by Year, 1997-2005

Year		1997	1998	1999	2000	2001	2002	2003	2004	2005		
Number of Isolates Tested	Chickens	24	66	154	145	130	150	156	171	183		
	Turkeys	11	6	37	18	15	9	6	14	7		
	Cattle	2	33	189	187	87	98	78	48	34		
	Swine	25	105	114	81	44	48	27	53	42		
Antimicrobial Class	Antimicrobial	Isolate Source										
Aminoglycosides	Amikacin	Chickens	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	
		Turkeys	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	
		Cattle	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	
		Swine	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	
	Gentamicin	Chickens	20.8% 5	18.2% 12	16.9% 26	15.2% 22	3.1% 4	12.7% 19	5.1% 8	4.1% 7	4.4% 8	
		Turkeys	45.5% 5	50.0% 3	29.7% 11	33.3% 6	53.3% 8	44.4% 4	83.3% 5	64.3% 9	14.3% 1	
		Cattle	0.0% 0	3.0% 1	2.6% 5	1.6% 3	0.0% 0	2.0% 2	1.3% 1	0.0% 0	0.0% 0	
		Swine	0.0% 0	0.0% 0	1.8% 2	0.0% 0	2.3% 1	2.1% 1	0.0% 0	3.8% 2	7.1% 3	
	Kanamycin	Chickens	8.3% 2	4.5% 3	3.9% 6	3.4% 5	3.1% 4	5.3% 8	7.7% 12	9.9% 17	7.7% 14	
		Turkeys	81.8% 9	66.7% 4	59.5% 22	44.4% 8	73.3% 11	55.6% 5	50.0% 3	21.4% 3	0.0% 0	
		Cattle	0.0% 0	54.5% 18	36.5% 69	27.3% 51	24.1% 21	26.5% 26	16.7% 13	14.6% 7	38.2% 13	
		Swine	16.0% 4	18.1% 19	21.1% 24	14.8% 12	13.6% 6	2.1% 1	0.0% 0	9.4% 5	7.1% 3	
	Streptomycin	Chickens	41.7% 10	45.5% 30	40.9% 63	35.9% 52	16.9% 22	30.0% 45	16.7% 26	8.2% 14	13.7% 25	
		Turkeys	81.8% 9	83.3% 5	81.1% 30	72.2% 13	93.3% 14	77.8% 7	100.0% 6	64.3% 9	57.1% 4	
		Cattle	100.0% 2	57.6% 19	63.0% 119	63.1% 118	46.0% 40	66.3% 65	52.6% 41	56.2% 27	55.9% 19	
		Swine	44.0% 11	82.9% 87	80.7% 92	77.8% 63	70.5% 31	77.1% 37	59.3% 16	77.4% 41	69.0% 29	
	Aminopenicillins	Ampicillin	Chickens	33.3% 8	30.3% 20	43.5% 67	42.1% 61	26.2% 34	45.3% 68	32.1% 50	46.8% 80	26.8% 49
			Turkeys	72.7% 8	50.0% 3	64.9% 24	66.7% 12	80.0% 12	55.6% 5	66.7% 4	28.6% 4	57.1% 4
			Cattle	100.0% 2	57.6% 19	66.1% 125	63.1% 118	57.5% 50	71.4% 70	59.0% 46	60.4% 29	73.5% 25
			Swine	72.0% 18	75.2% 79	64.0% 73	82.7% 67	63.6% 28	62.5% 30	51.9% 14	71.7% 38	66.7% 28

^a Typhimurium and Typhimurium var. 5- isolates combined

Table 10b. Antimicrobial Resistance among *Salmonella* Typhimurium Isolates from Food Animals, by Year, 1997-2005

Year		1997	1998	1999	2000	2001	2002	2003	2004	2005		
Number of Isolates Tested												
	Chickens	24	66	154	145	130	150	156	171	183		
	Turkeys	11	6	37	18	15	9	6	14	7		
	Cattle	2	33	189	187	87	98	78	48	34		
	Swine	25	105	114	81	44	48	27	53	42		
Antimicrobial Class	Antimicrobial	Isolate Source										
β-Lactam/β-Lactamase Inhibitor Combinations	Amoxicillin-Clavulanic Acid	Chickens	0.0%	9.1%	29.2%	25.5%	14.6%	28.7%	25.6%	43.3%	19.7%	
			0	6	45	37	19	43	40	74	36	
		Turkeys	63.6%	0.0%	51.4%	38.9%	53.3%	22.2%	16.7%	14.3%	0.0%	
			7	0	19	7	8	2	1	2	0	
		Cattle	50.0%	6.1%	6.9%	12.8%	13.8%	17.3%	20.5%	25.0%	35.3%	
			1	2	13	24	12	17	16	12	12	
		Swine	0.0%	1.9%	1.8%	2.5%	4.5%	8.3%	0.0%	0.0%	9.5%	
			0	2	2	2	2	4	0	0	4	
	Cephalosporins	Ceftiofur	Chickens	0.0%	9.1%	29.9%	26.2%	14.60%	28.0%	25.6%	43.3%	19.7%
				0	6	46	38	19	42	40	74	36
			Turkeys	63.6%	0.0%	48.6%	38.9%	53.3%	22.2%	16.7%	14.3%	0.0%
				7	0	18	7	8	2	1	2	0
			Cattle	0.0%	3.0%	6.9%	11.8%	11.5%	15.3%	20.5%	25.0%	35.3%
				0	1	13	22	10	15	16	12	12
			Swine	0.0%	0.0%	1.8%	0.0%	0.0%	4.2%	0.0%	1.9%	4.8%
				0	0	2	0	0	2	0	1	2
Ceftriaxone		Chickens	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	1.8%	0.0%	
			0	0	0	0	0	2	0	3	0	
		Turkeys	0.0%	0.0%	8.1%	11.1%	6.7%	0.0%	16.7%	0.0%	0.0%	
			0	0	3	2	1	0	1	0	0	
	Cattle	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	2.1%	0.0%		
		0	0	1	0	0	0	0	1	0		
	Swine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
		0	0	0	0	0	0	0	0	0		
Cephalothin	Chickens	0.0%	9.1%	29.9%	25.5%	13.8%	28.0%	25.6%				
		0	6	46	37	18	42	40				
	Turkeys	63.6%	50.0%	51.4%	38.9%	60.0%	22.2%	33.3%				
		7	3	19	7	9	2	2				
	Cattle	0.0%	3.0%	13.2%	12.8%	12.6%	16.3%	21.8%				
		0	1	25	24	11	16	17				
	Swine	0.0%	0.0%	0.9%	2.5%	0.0%	4.2%	0.0%				
		0	0	1	2	0	2	0				
Cephamycins	Cefoxitin	Chickens				24.8%	14.6%	26.7%	23.7%	43.3%	19.7%	
						36	19	40	37	74	36	
		Turkeys				38.9%	53.3%	22.2%	16.7%	14.3%	0.0%	
						7	8	2	1	2	0	
	Cattle				9.1%	11.5%	11.2%	16.7%	25.0%	35.3%		
					17	10	11	13	12	12		
	Swine				12.1%	0.0%	4.2%	3.7%	0.0%	4.8%		
					1	0	2	1	0	2		

^a Typhimurium and Typhimurium var. 5- isolates combined

Table 10c. Antimicrobial Resistance among *Salmonella* Typhimurium Isolates from Food Animals, by Year, 1997-2005

Year		1997	1998	1999	2000	2001	2002	2003	2004	2005	
Number of Isolates Tested											
	Chickens	24	66	154	145	130	150	156	171	183	
	Turkeys	11	6	37	18	15	9	6	14	7	
	Cattle	2	33	189	187	87	98	78	48	34	
	Swine	25	105	114	81	44	48	27	53	42	
Antimicrobial Class	Antimicrobial	Isolate Source									
Folate Pathway Inhibitors	Sulfonamides	Chickens	41.7% 10	37.9% 25	32.5% 50	34.5% 50	18.5% 24	31.3% 47	28.2% 44	47.4% 81	37.2% 68
		Turkeys	81.8% 9	83.3% 5	75.7% 28	66.7% 12	86.7% 13	77.8% 7	100.0% 6	78.6% 11	57.1% 4
		Cattle	100.0% 2	60.6% 20	64.6% 122	64.2% 120	54.0% 47	58.2% 57	44.9% 35	60.4% 29	73.5% 25
		Swine	80.0% 20	83.8% 88	78.9% 90	86.4% 70	75.0% 33	68.8% 33	63.0% 17	81.1% 43	69.0% 29
	Trimethoprim-Sulfamethoxazole	Chickens	0.0% 0	1.5% 1	1.3% 2	0.0% 0	0.8% 1	13.0% 2	0.6% 1	0.0% 0	37.2% 0
		Turkeys	0.0% 0	0.0% 0	0.0% 0	11.1% 2	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0
		Cattle	0.0% 0	6.1% 2	9.0% 17	2.1% 4	2.3% 2	4.1% 4	2.6% 2	4.2% 2	5.9% 2
		Swine	4.0% 1	0.0% 0	0.0% 0	0.0% 0	0.0% 0	2.1% 1	3.7% 1	1.9% 1	9.5% 4
Phenicol	Chloramphenicol	Chickens	20.8% 5	19.7% 13	10.4% 16	14.5% 21	11.5% 15	16.0% 24	5.1% 8	1.8% 3	37.2% 15
		Turkeys	63.6% 7	0.0% 0	54.1% 20	55.6% 10	73.3% 11	66.7% 6	50.0% 3	28.6% 4	57.1% 4
		Cattle	100.0% 2	27.3% 9	37.0% 70	42.8% 80	37.9% 33	49.0% 48	42.3% 33	54.2% 26	47.1% 16
		Swine	52.0% 13	57.1% 60	49.1% 56	53.1% 43	47.7% 21	56.3% 27	48.1% 13	60.4% 32	54.8% 23
Quinolones	Ciprofloxacin	Chickens	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0
		Turkeys	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0
		Cattle	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0
		Swine	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0	0.0% 0
	Nalidixic Acid	Chickens	0.0% 0	0.0% 0	6.0% 1	7.0% 1	0.0% 0	2.7% 4	0.0% 0	0.0% 0	37.2% 2
		Turkeys	45.5% 5	0.0% 0	51.4% 19	33.3% 6	60.0% 9	55.6% 5	33.3% 2	14.3% 2	0.0% 0
		Cattle	0.0% 0	0.0% 0	0.5% 1	0.0% 0	0.0% 0	1.0% 1	0.0% 0	6.2% 3	0.0% 0
		Swine	0.0% 0	0.0% 0	0.0% 0	1.2% 1	0.0% 0	2.1% 1	0.0% 0	0.0% 0	0.0% 0
Tetracyclines	Tetracycline	Chickens	33.3% 8	31.8% 21	32.5% 50	32.4% 47	16.2% 21	28.0% 42	33.3% 52	44.4% 76	37.2% 63
		Turkeys	90.9% 10	83.3% 5	78.4% 29	83.3% 15	93.3% 14	77.8% 7	100.0% 6	78.6% 11	57.1% 4
		Cattle	100.0% 2	63.6% 21	58.7% 111	61.5% 115	44.8% 39	64.3% 63	53.8% 42	60.4% 29	67.6% 23
		Swine	84.0% 21	89.5% 94	84.2% 96	91.1% 73	79.5% 35	89.6% 43	74.1% 20	90.6% 48	83.3% 35

^a Typhimurium and Typhimurium var. 5- isolates combined