

Table 7A. Distribution of MICs and Occurrence of Resistance for Top Serotypes Tested from Cattle, 2010¹

Antimicrobial	Serotype (# of Isolates)	%I ²	%R ³	95% CI ⁴	Distribution (%) of MICs (µg/ml) ⁵													
					0.015	0.03	0.06	0.125	0.25	0.50	1	2	4	8	16	32	64	128
Aminoglycosides																		
Amikacin	Montevideo (61)	0.0	0.0	0.0-7.4							57.4	41.0	1.6					
	Dublin (41)	0.0	0.0	0.0-10.7							29.3	65.9	4.9					
	Kentucky (13)	0.0	0.0	0.0-28.3							61.5	38.5						
	Anatum (12)	0.0	0.0	0.0-30.1					16.7				83.3					
	Typhimurium (11)	0.0	0.0	0.0-32.1									54.5	45.5				
	Cerro (10)	0.0	0.0	0.0-34.5									60.0	20.0	20.0			
Gentamicin	Montevideo (61)	0.0	0.0	0.0-7.4							49.2	47.5	3.3					
	Dublin (41)	0.0	19.5	9.4-35.4							14.6	53.7	9.8		2.4		9.8	9.8
	Kentucky (13)	0.0	0.0	0.0-28.3							30.8	69.2						
	Anatum (12)	0.0	0.0	0.0-30.1							100.0							
	Typhimurium (11)	0.0	0.0	0.0-32.1							36.4	63.6						
	Cerro (10)	0.0	0.0	0.0-34.5							60.0	30.0	10.0					
Kanamycin	Montevideo (61)	0.0	0.0	0.0-7.4										100.0				
	Dublin (41)	0.0	56.1	39.9-71.2										43.9			4.9	51.2
	Kentucky (13)	0.0	0.0	0.0-28.3										100.0				
	Anatum (12)	0.0	0.0	0.0-30.1										100.0				
	Typhimurium (11)	0.0	9.1	0.5-42.9										90.9				9.1
	Cerro (10)	0.0	0.0	0.0-34.5										100.0				
Streptomycin	Montevideo (61)	N/A	3.3	0.6-12.4												96.7	3.3	
	Dublin (41)	N/A	78.0	61.9-88.9												22.0	2.4	75.6
	Kentucky (13)	N/A	23.1	6.2-54.0												76.9	15.4	7.7
	Anatum (12)	N/A	0.0	0.0-30.1												100.0		
	Typhimurium (11)	N/A	45.5	18.2-75.5												54.5	27.3	18.2
	Cerro (10)	N/A	0.0	0.0-34.5												100.0		
β-Lactam/β-Lactamase Inhibitor Combinations																		
Amoxicillin-Clavulanic Acid	Montevideo (61)	0.0	0.0	0.0-7.4							96.7	3.3						
	Dublin (41)	2.4	70.7	54.2-83.3							12.2	7.3	4.9	2.4	2.4		70.7	
	Kentucky (13)	0.0	0.0	0.0-28.3							100.0							
	Anatum (12)	0.0	0.0	0.0-30.1							100.0							
	Typhimurium (11)	18.2	18.2	3.2-52.3							54.5			9.1	18.2		18.2	
	Cerro (10)	0.0	0.0	0.0-34.5							90.0		10.0					

¹ Data is only presented for serotypes with at least 10 or more isolates

² Percent of isolates with intermediate susceptibility

³ Percent of isolates that were resistant

⁴ 95% confidence intervals for percent resistant (%R) were calculated using the Wilson interval with continuity correction method

⁵ The unshaded areas indicate the range of dilutions tested for each antimicrobial. Single vertical bars indicate the breakpoints for susceptibility, while double vertical bars indicate the breakpoints for resistance. Numbers in the shaded area indicate the percentages of isolates with MICs greater than the highest tested concentrations. Numbers listed for the lowest tested concentrations represent the percentages of isolates with MICs equal to or less than the lowest tested concentration. CLSI breakpoints were used when available. There are no CLSI breakpoints for streptomycin; breakpoints established by NARMS were used

Table 7A (continued). Distribution of MICs and Occurrence of Resistance for Top Serotypes Tested from Cattle, 2010¹

Antimicrobial	Serotype (# of Isolates)	%I ²	%R ³	95% CI ⁴	Distribution (%) of MICs (µg/ml) ⁵													
					0.015	0.03	0.06	0.125	0.25	0.50	1	2	4	8	16	32	64	128
Cepheems																		
Cefoxitin	Montevideo (61)	1.6	0.0	0.0-7.4							6.6	83.6	4.9	3.3	1.6			
	Dublin (41)	2.4	68.3	51.8-81.4							4.9	4.9	12.2	7.3	2.4	2.4	65.9	
	Kentucky (13)	0.0	0.0	0.0-28.3								38.5	61.5					
	Anatum (12)	0.0	0.0	0.0-30.1									100.0					
	Typhimurium (11)	0.0	18.2	3.2-52.3								72.7	9.1			9.1	9.1	
	Cerro (10)	10.0	0.0	0.0-34.5							20.0	40.0	30.0		10.0			
Ceftiofur	Montevideo (61)	0.0	0.0	0.0-7.4					57.4	42.6								
	Dublin (41)	0.0	70.7	54.2-83.3		7.3	12.2	9.8					7.3	63.4				
	Kentucky (13)	0.0	0.0	0.0-28.3					30.8	69.2								
	Anatum (12)	0.0	0.0	0.0-30.1						100.0								
	Typhimurium (11)	0.0	18.2	3.2-52.3					36.4	36.4	9.1				18.2			
	Cerro (10)	10.0	0.0	0.0-34.5					40.0	50.0		10.0						
Ceftriaxone	Montevideo (61)	0.0	0.0	0.0-7.4					100.0									
	Dublin (41)	0.0	70.7	54.2-83.3					26.8	2.4			2.4	31.7	26.8	9.8		
	Kentucky (13)	0.0	0.0	0.0-28.3					100.0									
	Anatum (12)	0.0	0.0	0.0-30.1					100.0									
	Typhimurium (11)	0.0	18.2	3.2-52.3					81.8						18.2			
	Cerro (10)	0.0	0.0	0.0-34.5					90.0	10.0								
Folate Pathway Inhibitors																		
Sulfonamides	Montevideo (61)	N/A	0.0	0.0-7.4											4.9	52.5	42.6	
	Dublin (41)	N/A	90.2	75.9-96.8											7.3	2.4		90.2
	Kentucky (13)	N/A	0.0	0.0-28.3												15.4	84.6	
	Anatum (12)	N/A	0.0	0.0-30.1												16.7	83.3	
	Typhimurium (11)	N/A	45.5	18.2-75.5												36.4	18.2	45.5
	Cerro (10)	N/A	0.0	0.0-34.5											10.0	70.0	10.0	10.0
Trimethoprim-Sulfamethoxazole	Montevideo (61)	N/A	0.0	0.0-7.4					100.0									
	Dublin (41)	N/A	2.4	0.1-14.4					9.8	63.4	22.0		2.4	2.4				
	Kentucky (13)	N/A	0.0	0.0-28.3					100.0									
	Anatum (12)	N/A	0.0	0.0-30.1					100.0									
	Typhimurium (11)	N/A	0.0	0.0-32.1					90.9	9.1								
	Cerro (10)	N/A	0.0	0.0-34.5					100.0									

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					0.015	0.03	0.06	0.125	0.25	0.50	1	2	4	8	16	32	64
Penicillins																	
Ampicillin	Montevideo (61)	0.0	0.0	0.0-7.4							96.7	1.6	1.6				
	Dublin (41)	2.4	78.0	61.9-88.9							12.2	7.3			2.4		78.0
	Kentucky (13)	0.0	0.0	0.0-28.3							100.0						
	Anatum (12)	0.0	0.0	0.0-30.1							100.0						
	Typhimurium (11)	0.0	45.5	18.2-75.5							54.5						
	Cerro (10)	0.0	0.0	0.0-34.5							100.0						
Phenicol																	
Chloramphenicol	Montevideo (61)	0.0	0.0	0.0-7.4									42.6	57.4			
	Dublin (41)	0.0	92.7	79.0-98.1									7.3			2.4	90.2
	Kentucky (13)	0.0	0.0	0.0-28.3								7.7	46.2	46.2			
	Anatum (12)	0.0	0.0	0.0-30.1									16.7	83.3			
	Typhimurium (11)	0.0	36.4	12.4-68.4									36.4	27.3			36.4
	Cerro (10)	0.0	0.0	0.0-34.5									70.0	30.0			
Quinolones																	
Ciprofloxacin	Montevideo (61)	0.0	0.0	0.0-7.4	100.0												
	Dublin (41)	0.0	0.0	0.0-10.7	36.6	48.8			12.2	2.4							
	Kentucky (13)	0.0	0.0	0.0-28.3	100.0												
	Anatum (12)	0.0	0.0	0.0-30.1	91.7	8.3											
	Typhimurium (11)	0.0	0.0	0.0-32.1	100.0												
	Cerro (10)	0.0	0.0	0.0-34.5	100.0												
Nalidixic Acid	Montevideo (61)	N/A	0.0	0.0-7.4								88.5	11.5				
	Dublin (41)	N/A	14.6	6.1-29.8								9.8	75.6				14.6
	Kentucky (13)	N/A	0.0	0.0-28.3								46.2	53.8				
	Anatum (12)	N/A	0.0	0.0-30.1									100.0				
	Typhimurium (11)	N/A	0.0	0.0-32.1								18.2	81.8				
	Cerro (10)	N/A	0.0	0.0-34.5								80.0	20.0				
Tetracyclines																	
Tetracycline	Montevideo (61)	0.0	11.5	5.1-22.9									88.5			4.9	6.6
	Dublin (41)	0.0	85.4	70.2-93.9									14.6				85.4
	Kentucky (13)	0.0	53.8	26.1-79.6									46.2			7.7	46.2
	Anatum (12)	0.0	0.0	0.0-30.1									100.0				
	Typhimurium (11)	0.0	45.5	18.2-75.5									54.5			18.2	27.3
	Cerro (10)	0.0	10.0	0.5-45.9									90.0			10.0	

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