

Supplementary Table S2—Kappa values and associated statistics for antimicrobial susceptibility comparisons among transtracheal wash (TTW), nasal swab (NS), deep nasopharyngeal swab (DNP), and bronchoalveolar lavage (BAL) for *M. haemolytica* obtained from >30-day old Holstein/Holstein-cross bull calves with naturally occurring bovine respiratory disease. All NA values indicate a kappa statistic could not be calculated due to all results falling within a single cell. Totals cell counts for each comparison are in parentheses.

Drug	Comparison	Kappa	St. Error	95% CI		P Cum >95%	Probabilistic CI	
				Lower	Upper		Lower	Upper
Ceftiofur	NS vs DNP (n=10)	NA	NA	NA	NA	NA	NA	NA
	NS vs BAL (n=10)	NA	NA	NA	NA	NA	NA	NA
	NS vs. TTW (n=10)	NA	NA	NA	NA	NA	NA	NA
	BAL vs. DNP (n=13)	NA	NA	NA	NA	NA	NA	NA
	TTW vs. DNP (n=12)	NA	NA	NA	NA	NA	NA	NA
	TTW vs. BAL (n=12)	NA	NA	NA	NA	NA	NA	NA
Danofloxacin	NS vs NPS (n=7)	NA	NA	NA	NA	NA	NA	NA
	NS vs. BAL (n=7)	NA	NA	NA	NA	NA	NA	NA
	NS vs. TTW (n=7)	NA	NA	NA	NA	NA	NA	NA
	BAL vs. DNP (n=9)	NA	NA	NA	NA	NA	NA	NA
	TTW vs. DNP (n=9)	NA	NA	NA	NA	NA	NA	NA
	TTW vs. BAL (n=9)	NA	NA	NA	NA	NA	NA	NA
Enrofloxacin	NS vs. DNP (n=10)	1	0	1	1	-	-	-
	NS vs. BAL (n=10)	1	0	1	1	-	-	-

	NS vs. TTW (n=10)	0.62	0.36	-0.19	1	1	-	0
	BAL vs. DNP (n=13)	0.63	0.34	-0.12	1	1	-	0
	TTW vs. DNP (n=12)	0.63	0.35	-0.14	1	1	-	0
	TTW vs. BAL (n=12)	0.63	0.35	-0.14	1	1	-	0
Florfenicol	NS vs. DNP (n=10)	1	0	1	1	-	-	-
	NS vs. BAL (n=10)	1	0	1	1	-	-	-
	NS vs. TTW (n=10)	1	0	1	1	-	-	-
	BAL vs. DNP (n=13)	1	0	1	1	-	-	-
	TTW vs DNP (n=12)	1	0	1	1	-	-	-
	TTW vs. BAL (n=12)	1	0	1	1	-	-	-
Penicillin	NS vs. NPS (n=10)	0	0	0	0	1	-	0
	NS vs BAL (n=10)	1	0	1	1	-	-	-
	NS vs. TTW (n=10)	1	0	1	1	-	-	-
	BAL vs. DNP (n=13)	0	0	0	0	-	-	-
	TTW vs DNP (n=12)	0	0	0	0	1	-	0
	TTW vs BAL (n=12)	1	0	1	1	-	-	-
Spectinomycin	NS vs. DNP (n=8)	0.5	0.28	-0.17	1	1	-	0
	NS vs BAL (n=8)	0.5	0.28	-0.17	1	1	-	0
	NS vs. TTW (n=8)	0	0.33	-0.77	0.77	0.99	-	0
	BAL vs DNP (n=11)	0.39	0.37	-0.44	1	1	-	0
	TTW vs DNP (n=10)	0.38	0.38	-0.48	1	1	-	0

	TTW vs BAL (n=10)	0.38	0.38	-0.48	1	1	-	0
Tilimosin	NS vs. DNP (n=8)	1	0	1	1	-	-	-
	NS vs BAL (n=8)	1	0	1	1	-	-	-
	NS vs TTW (n=8)	1	0	1	1	-	-	-
	BAL vs DNP (n=11)	1	0	1	1	-	-	-
	TTW vs DNP (n=10)	1	0	1	1	-	-	-
	TTW vs BAL (n=10)	1	0	1	1	-	-	-
	Tulathromycin	NS vs DNP (n=8)	1	0	1	1	-	-
NS vs BAL (n=8)		1	0	1	1	-	-	-
NS vs TTW (n=8)		1	0	1	1	-	-	-
BAL vs DNP (n=11)		1	0	1	1	-	-	-
TTW vs DNP (n=10)		1	0	1	1	-	-	-
TTW vs BAL (n=10)		1	0	1	1	-	-	-