

Table S1. *p*-values ¹ of pairwise comparisons of species richness estimators in cecal samples of chickens.

Day 11			
Observed Species index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	1		
Lincospectin	0.0116	0.0002	
Palm oil	1	1	0.0029
Chao 1 index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	0.9654		
Lincospectin	0.0082	0.0075	
Palm oil	0.4294	0.4294	0.0005
Shannon index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	0.9650		
Lincospectin	0.0780	0.0310	
Palm oil	0.3030	0.2520	0.3810
Day 20			
Observed Species index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	0.7680		
Lincospectin	0.0019	0.0003	
Palm oil	0.3910	0.7680	0.0039
Chao1 index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	1		
Lincospectin	0.0016	0.0022	
Palm oil	1	1	0.0026
Shannon index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	0.0540		
Lincospectin	1	1	
Palm oil	0.1160	1	1
Day 33			
Observed Species index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	0.4085		
Lincospectin	0.0395	0.0026	
Palm oil	0.5354	0.0710	0.0710
Chao1 index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	0.5470		
Lincospectin	0.1739	0.00045	
Palm oil	1	1	0.0507
Shannon index	<i>B. licheniformis</i>	Esterified butyrins	Lincospectin
Esterified butyrins	1		
Lincospectin	1	1	
Palm oil	1	1	1

¹*p*-values < 0.05 are written in bold

Table S2. Families with significant different abundance between lincospectin and the administered feed additives at day 11.

Lincospectin vs <i>B. licheniformis</i>							
log2FoldChange	pvalue	padj	OTU_ID	Phylum	Class	Order	Family
-6.87	7.15e-15	2.29e-13	OTU_2	Bacteroidetes	Bacteroidia	Bacteroidales	Bacteroidaceae
8.11	7.94e-10	1.27e-08	OTU_76	Actinobacteria	Actinobacteria	Bifidobacteriales	Bifidobacteriaceae
6.85	2.29e-09	2.44e-08	OTU_208	Firmicutes	Bacilli	Bacillales	Staphylococcaceae
-5.34	1.76e-08	1.41e-07	OTU_137	Firmicutes	Clostridia	Clostridiales	Clostridiaceae 1
-10.1	3.82e-08	2.44e-07	OTU_57	Tenericutes	Mollicutes	Mollicutes RF9	uncultured rumen bacterium
-7.38	3.32e-07	1.77e-06	OTU_277	Firmicutes	Clostridia	Clostridiales	Defluviitaleaceae
-5.50	1.16e-05	5.32e-05	OTU_121	Firmicutes	Clostridia	Clostridiales	Ambiguous_taxa
-5.96	8.96e-05	0.0004	OTU_148	Tenericutes	Mollicutes	Mollicutes RF9	uncultured bacterium
2.43	0.0011	0.0040	OTU_24	Proteobacteria	Gammaproteobacteria	Enterobacteriales	Enterobacteriaceae
-4.90	0.0016	0.0052	OTU_74	Tenericutes	Mollicutes	Mollicutes RF9	Ambiguous_taxa
-0.951	0.0020	0.0059	OUT_3	Firmicutes	Clostridia	Clostridiales	Ruminococcaceae
-2.69	0.0032	0.0084	OTU_102	Firmicutes	Clostridia	Clostridiales	Christensenellaceae
-2.11	0.0040	0.0097	OTU_115	Firmicutes	Clostridia	Clostridiales	Clostridiales vadinBB60 group
-2.02	0.0066	0.0220	OTU_62	Firmicutes	Bacilli	Lactobacillales	Streptococcaceae
2.44	0.0147	0.0461	OTU_11	Firmicutes	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae
Lincospectin vs Esterified butyrins							
log2FoldChange	pvalue	padj	OTU_ID	Phylum	Class	Order	Family
-8.57	1.46e-18	6.27e-17	OTU_2	Bacteroidetes	Bacteroidia	Bacteroidales	Bacteroidaceae
-11.5	2.99e-15	6.43e-14	OTU_57	Tenericutes	Mollicutes	Mollicutes RF9	uncultured rumen bacterium
8.69	1.44e-13	2.07e-12	OTU_76	Actinobacteria	Actinobacteria	Bifidobacteriales	Bifidobacteriaceae
6.52	7.58e-10	8.15e-09	OTU_208	Firmicutes	Bacilli	Bacillales	Staphylococcaceae
-4.51	1.15e-07	9.93e-07	OTU_227	Firmicutes	Clostridia	Clostridiales	Clostridiaceae 1
-6.15	2.79e-06	2.00e-05	OTU_277	Firmicutes	Clostridia	Clostridiales	Defluviitaleaceae
-5.52	5.95e-06	3.66e-05	OTU_67	Tenericutes	Mollicutes	Mollicutes RF9	uncultured bacterium
-5.22	7.10e-06	3.82e-05	OTU_74	Tenericutes	Mollicutes	Mollicutes RF9	Ambiguous_taxa
-5.59	2.04e-05	9.76e-05	OTU_121	Firmicutes	Clostridia	Clostridiales	Ambiguous_taxa
-2.53	0.0021	0.0090	OTU_102	Firmicutes	Clostridia	Clostridiales	Christensenellaceae
0.986	0.0025	0.0099	OTU_4	Firmicutes	Clostridia	Clostridiales	Lachnospiraceae
Lincospectin vs Palm oil							
log2FoldChange	pvalue	padj	OTU_ID	Phylum	Class	Order	Family

-12.0	4.91e-100	1.47e-98	OTU_2	Bacteroidetes	Bacteroidia	Bacteroidales	Bacteroidaceae
-7.64	9.98e-19	1.50 e-17	OTU_121	Firmicutes	Clostridia	Clostridiales	Ambiguous_taxa
-7.37	1.25e-09	1.25e-08	OTU_67	Tenericutes	Mollicutes	Mollicutes RF9	uncultured bacterium
-9.23	1.03e-07	7.74e-07	OTU_57	Tenericutes	Mollicutes	Mollicutes RF9	uncultured rumen bacterium
5.95	2.24e-06	1.19e-05	OTU_76	Actinobacteria	Actinobacteria	Bifidobacteriales	Bifidobacteriaceae
-4.94	2.39e-06	1.19e-05	OTU_227	Firmicutes	Clostridia	Clostridiales	Clostridiaceae 1
-5.73	2.17e-05	9.28e-05	OTU_277	Firmicutes	Clostridia	Clostridiales	Defluviitaleaceae
-4.75	3.65e-05	0.0001	OTU_205	Tenericutes	Mollicutes	Mollicutes RF9	Ambiguous_taxa
3.63	0.0001	0.0005	OTU_208	Firmicutes	Bacilli	Bacillales	Staphylococcaceae
-3.03	0.0008	0.0025	OTU_102	Firmicutes	Clostridia	Clostridiales	Christensenellaceae
-2.40	0.0036	0.0098	OTU_744	Bacteroidetes	Bacteroidia	Bacteroidales	Prevotellaceae
-0.766	0.0053	0.0145	OTU_1	Firmicutes	Clostridia	Clostridiales	Ruminococcaceae
1.48	0.0106	0.0268	OTU_11	Firmicutes	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae
0.726	0.0212	0.0499	OTU_4	Firmicutes	Clostridia	Clostridiales	Lachnospiraceae
