

Additional file 2. Median (SD) relative abundances of **A)** the 17 phyla identified in piglet fecal swabs overall, **B)** families occurring with a minimum median relative abundance of 0.1%, and **C)** genera occurring with a minimum median relative abundance of 0.1%. Samples are grouped by system (conventional or raised without antibiotics), province (Ontario or Quebec), and sampling timepoint (TP1, TP2, TP3, or TP4) as identified by column headers. Differences between groups were assessed using Whitney-Mann test for system and province groupings, and Kruskal-Wallis test for sampling timepoint. Values are presented as Median (SD). Difference column denotes significant differences in relative abundance between groups corrected for multiple tests (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$).

2 A)		System			Province			Sampling Timepoint				Difference
Phylum	Overall	Conventional	RWA	Difference	ON	QC	Difference	TP1	TP2	TP3	TP4	
Firmicutes	42.8 (12.5)	42.9 (12.5)	42.6 (12.5)	ns	42.2 (13.4)	43.4 (11.8)	ns	32.9 (10)	42.2 (11.7)	45.8 (11.8)	47 (10.9)	****
Bacteroidetes	33.5 (11.3)	33.6 (11.3)	33.4 (11.3)	ns	33.2 (11.5)	33.8 (11.2)	ns	32.1 (11.6)	31.9 (11.1)	29.3 (9.4)	40.9 (10.2)	****
Proteobacteria	9.2 (13)	8.9 (12.6)	9.6 (13.4)	ns	9.5 (12.5)	9.1 (13.3)	ns	15.2 (15.8)	10.3 (12.4)	8.5 (9.6)	4.2 (9.4)	****
Bacteria unclassified	1.2 (1.9)	1.2 (2.1)	1.2 (1.5)	ns	1.3 (2.1)	1.1 (1.6)	*	0.1 (0.9)	1.4 (2.1)	2.1 (2.2)	1.5 (1.2)	****
Fusobacteria	0.5 (7.2)	0.5 (6.9)	0.7 (7.4)	**	0.5 (7.8)	0.5 (6.6)	ns	11.2 (9.1)	0.7 (2.5)	0.3 (2.6)	0 (1)	****
Actinobacteria	0.4 (1.5)	0.4 (1.3)	0.5 (1.6)	***	0.5 (1.3)	0.4 (1.6)	ns	0.5 (0.9)	0.7 (1.4)	0.4 (2.3)	0.2 (0.6)	****
Synergistetes	0.2 (4)	0.2 (4.4)	0.1 (3.3)	***	0.2 (2.9)	0.1 (4.6)	ns	0 (0.5)	0.3 (3.5)	2.9 (6)	0.1 (0.8)	****
Spirochaetes	0.1 (3.2)	0.1 (3.6)	0.1 (2.6)	ns	0.2 (3.7)	0.1 (2.8)	***	0 (0.8)	0.1 (4)	0.3 (4.2)	0.8 (2.4)	****
Verrucomicrobia	0.1 (4.2)	0.1 (4)	0.1 (4.4)	ns	0.1 (4.4)	0.1 (4.1)	****	0 (1.5)	0.2 (6.8)	0.1 (3.9)	0.1 (1)	****
Planctomycetes	0 (0.5)	0 (0.6)	0 (0.4)	ns	0 (0.4)	0 (0.6)	ns	0 (0.2)	0 (0.5)	0.1 (0.7)	0.1 (0.4)	****
Lentisphaerae	0 (0.1)	0 (0.3)	0 (0.2)	ns	0 (0.1)	0 (0.2)	ns	0 (0)	0 (0)	0 (0.4)	0 (0.2)	****
Deferribacteres	0 (0.2)	0 (0.2)	0 (0.2)	*	0 (0.3)	0 (0.2)	ns	0 (0)	0 (0)	0 (0.1)	0 (0.4)	****
TM7	0 (0.5)	0 (0.2)	0 (0.1)	ns	0 (0.7)	0 (0.2)	*	0 (0)	0 (0)	0 (0.2)	0 (0.2)	****
Elusimicrobia	0 (0.2)	0 (0)	0 (0.1)	**	0 (0.2)	0 (0.1)	ns	0 (0)	0 (0)	0 (0.1)	0 (0.2)	****
Fibrobacteres	0 (0.1)	0 (0.2)	0 (0.1)	ns	0 (0.1)	0 (0.1)	ns	0 (0)	0 (0.2)	0 (0.2)	0 (0)	****

Tenericutes	0 (0.1)	0 (0.1)	0 (0)	ns	0 (0.1)	0 (0.1)	****	0 (0)	0 (0)	0 (0)	0 (0.2)	****
Chlamydiae	0 (0.2)	0 (0.6)	0 (0.1)	****	0 (0)	0 (0.3)	****	0 (0.9)	0 (0.2)	0 (0.1)	0 (0.1)	*

2 B)												
<i>Family</i>	<i>Overall</i>	<i>Convention al</i>	<i>RWA</i>	<i>Differe nce</i>	<i>ON</i>	<i>QC</i>	<i>Differe nce</i>	<i>TP1</i>	<i>TP2</i>	<i>TP3</i>	<i>TP4</i>	<i>Differen ce</i>
<i>Lachnospiraceae</i>	10.6 (6.5)	11 (6.4)	10.1 (6.7)	ns	9.6 (6.8)	11.1 (6.3)	***	8 (5)	11.7 (7.6)	11.7 (7)	11.2 (5)	****
<i>Bacteroidaceae</i>	10.4 (10.9)	10.9 (10.7)	9.9 (11.2)	ns	11.2 (10.4)	9.7 (11.3)	ns	21 (10.4)	15.6 (9.6)	10.9 (9.5)	1.1 (3.2)	****
<i>Ruminococcaceae</i>	8.6 (6.2)	8.9 (6.5)	8 (6)	ns	8.6 (6.2)	8.6 (6.3)	ns	2.8 (4.7)	8.9 (6.3)	9.4 (5.7)	11.8 (4.8)	****
<i>Prevotellaceae</i>	6.7 (11.8)	6.3 (12.1)	7.2 (11.5)	ns	6.3 (11.8)	7.1 (11.9)	ns	3.3 (7.6)	4.2 (6.2)	4.3 (7)	26.7 (10)	****
<i>Acidaminococcaceae</i>	5.2 (4.5)	5.3 (4.2)	5 (4.9)	ns	5.1 (4.3)	5.4 (4.7)	ns	0.9 (2.7)	4.4 (4.5)	6.8 (4.6)	7.2 (3.6)	****
<i>Porphyromonadaceae</i>	4.6 (4.1)	5 (4.1)	4.3 (4.1)	*	4.7 (4)	4.6 (4.1)	ns	1.8 (4.9)	5 (3.7)	4.7 (3.3)	6.4 (3.5)	****
<i>Enterobacteriaceae</i>	4.2 (12.8)	4 (12.4)	4.6 (13.3)	ns	4.4 (12.3)	4.1 (13.3)	ns	9.1 (16.6)	6.5 (12.6)	4.4 (9.3)	0.5 (7.8)	****
<i>Lactobacillaceae</i>	2.2 (5.6)	2 (5.6)	2.5 (5.6)	ns	2 (5.8)	2.3 (5.4)	ns	2.8 (4.2)	2.6 (4.7)	1 (2.8)	2.6 (8.4)	****
<i>Veillonellaceae</i>	1.8 (5.3)	1.5 (5)	2.3 (5.5)	***	1.7 (5.4)	1.8 (5.2)	ns	4.9 (5.7)	0.9 (2.7)	1 (3.8)	2.3 (6.5)	****
<i>Bacteria unclassified</i>	1.2 (1.9)	1.2 (2.1)	1.2 (1.5)	ns	1.3 (2.1)	1.1 (1.6)	*	0.1 (0.9)	1.4 (2.1)	2.1 (2.2)	1.5 (1.2)	****
<i>Clostridiales unclassified</i>	1.1 (2.8)	1.2 (2.9)	1.1 (2.6)	ns	1.3 (3.3)	1.1 (2.3)	ns	0 (0.7)	1.1 (2.2)	2.6 (3.8)	2 (2.5)	****
<i>Clostridiaceae 1</i>	1.1 (3.2)	1.1 (3.1)	1.1 (3.4)	ns	1.1 (3.3)	1.1 (3.2)	ns	2.3 (4.7)	1.3 (2.9)	1.1 (2.5)	0.4 (1)	****
<i>Desulfovibrionaceae</i>	0.8 (0.8)	0.8 (0.8)	0.7 (0.7)	ns	0.7 (0.7)	0.8 (0.8)	ns	0.8 (0.8)	1.1 (0.8)	1.1 (0.6)	0.3 (0.4)	****
<i>Bacteroidetes unclassified</i>	0.6 (2)	0.7 (2.1)	0.6 (1.9)	ns	0.7 (2)	0.6 (2)	ns	0 (1)	0.5 (1.8)	1 (2)	1.9 (2.2)	****
<i>Firmicutes unclassified</i>	0.6 (2.3)	0.6 (2.4)	0.6 (2)	ns	0.6 (2.5)	0.7 (2)	ns	0 (0.5)	0.4 (1.4)	2.5 (2.9)	1.3 (2.2)	****
<i>Fusobacteriaceae</i>	0.5 (7.1)	0.4 (6.9)	0.7 (7.4)	*	0.5 (7.8)	0.5 (6.6)	ns	11.2 (9.1)	0.7 (2.5)	0.3 (2.6)	0 (1)	****
<i>Streptococcaceae</i>	0.4 (1.5)	0.4 (1.5)	0.5 (1.5)	ns	0.3 (1.4)	0.5 (1.6)	*	1.4 (1.8)	0.5 (1.7)	0.3 (0.9)	0.1 (0.6)	****
<i>Pasteurellaceae</i>	0.3 (1.8)	0.3 (1.5)	0.3 (2.2)	ns	0.3 (2.2)	0.2 (1.5)	ns	1.5 (3)	0.3 (1)	0.2 (0.6)	0 (0.8)	****
<i>Coriobacteriaceae</i>	0.2 (1.2)	0.2 (1.1)	0.2 (1.3)	ns	0.2 (1.1)	0.2 (1.3)	ns	0.1 (0.3)	0.3 (1.1)	0.2 (2)	0.2 (0.6)	****
<i>Sutterellaceae</i>	0.2 (0.8)	0.1 (0.8)	0.2 (0.7)	****	0.2 (0.8)	0.1 (0.7)	**	0.5 (1.2)	0.2 (0.6)	0.1 (0.3)	0.1 (0.3)	****
<i>Rikenellaceae</i>	0.2 (1.3)	0.2 (1.6)	0.2 (0.9)	ns	0.2 (1.2)	0.2 (1.4)	ns	0 (0.8)	0.7 (2)	0.6 (1)	0 (0.2)	****
<i>Synergistaceae</i>	0.2 (4)	0.2 (4.4)	0.1 (3.3)	***	0.2 (2.9)	0.1 (4.6)	ns	0 (0.5)	0.3 (3.5)	2.9 (6)	0.1 (0.8)	****

<i>Erysipelotrichaceae</i>	0.1 (0.2)	0.1 (0.3)	0.1 (0.2)	ns	0.1 (0.3)	0.1 (0.2)	ns	0.1 (0.2)	0.2 (0.3)	0.1 (0.2)	0.2 (0.3)	****
<i>Bacteroidales unclassified</i>	0.1 (1.6)	0.1 (1.1)	0.1 (2.1)	ns	0.1 (1.4)	0.1 (1.8)	ns	0 (1.7)	0.1 (1.5)	0.1 (2.1)	0.4 (1.3)	****
<i>Eubacteriaceae</i>	0.1 (1)	0.1 (1.2)	0.1 (0.7)	ns	0.1 (1.4)	0.1 (0.7)	**	0 (0.1)	0.1 (0.3)	0.1 (0.4)	0.5 (1.8)	****
<i>Spirochaetaceae</i>	0.1 (3.2)	0.1 (3.6)	0.1 (2.6)	ns	0.2 (3.7)	0.1 (2.8)	**	0 (0.8)	0.1 (4)	0.3 (4.2)	0.8 (2.4)	****
<i>Campylobacteraceae</i>	0.1 (1.9)	0.1 (1.7)	0.1 (2.1)	ns	0 (1.9)	0.1 (1.9)	***	0 (1)	0 (1.9)	0.1 (1.3)	0.4 (2.6)	****
<i>Actinomycetaceae</i>	0.1 (0.6)	0 (0.4)	0.1 (0.7)	ns	0.1 (0.5)	0 (0.7)	ns	0.1 (0.6)	0.2 (0.6)	0.1 (0.8)	0 (0)	****

2 C)												
Genus	Overall	Conventional	RWA	Difference	ON	QC	Difference	TP1	TP2	TP3	TP4	Difference
<i>Bacteroides</i>	10.4 (10.9)	10.9 (10.7)	9.9 (11.2)	ns	11.2 (10.4)	9.7 (11.3)	ns	21 (10.4)	15.6 (9.6)	10.9 (9.5)	1.1 (3.2)	****
<i>Ruminococcaceae unclassified</i>	5.7 (5.5)	5.9 (5.5)	5.5 (5.4)	ns	5.7 (5.5)	5.7 (5.5)	ns	1 (4.1)	7.5 (5.9)	8 (5.2)	6.2 (3.8)	****
<i>Prevotella</i>	5.3 (9.5)	4.7 (9.8)	6.2 (9.1)	ns	4.6 (9.2)	6 (9.7)	ns	2.8 (7.3)	3.2 (5.4)	2.9 (5.4)	19 (9.5)	****
<i>Phascolarctobacterium</i>	4.8 (4.3)	5 (4)	4.6 (4.7)	ns	4.8 (4)	4.9 (4.6)	ns	0.9 (2.7)	3.8 (4.2)	6.3 (4.5)	7.1 (3.4)	****
<i>Escherichia</i>	4.1 (12.4)	4 (12)	4.6 (12.9)	ns	4.2 (11.7)	4.1 (13)	ns	9 (16.2)	6.5 (12.2)	4.4 (8.9)	0.4 (7.2)	****
<i>Shigella</i>	2.7 (5.4)	3 (5.3)	2.3 (5.5)	ns	2.3 (4.9)	3 (5.7)	**	3 (4.3)	5.9 (6.4)	4.7 (5.5)	0.7 (1)	****
<i>Clostridium XIVa</i>	2.3 (4.9)	2.4 (4.6)	2.3 (5.3)	ns	2.3 (5.5)	2.4 (4.4)	ns	1.5 (1.8)	1.6 (6.4)	3.1 (6.4)	3.4 (2.7)	****
<i>Lachnospiraceae unclassified</i>	2.2 (5.6)	2 (5.6)	2.5 (5.6)	ns	2 (5.8)	2.3 (5.4)	ns	2.8 (4.2)	2.6 (4.7)	1 (2.8)	2.6 (8.4)	****
<i>Lactobacillus</i>	1.2 (1.9)	1.2 (2.1)	1.2 (1.5)	ns	1.3 (2.1)	1.1 (1.6)	*	0.1 (0.9)	1.4 (2.1)	2.1 (2.2)	1.5 (1.2)	****
<i>Bacteria unclassified</i>	1.1 (2.8)	1.2 (2.9)	1.1 (2.6)	ns	1.3 (3.3)	1.1 (2.3)	ns	0 (0.7)	1.1 (2.2)	2.6 (3.8)	2 (2.5)	****
<i>Clostridiales unclassified</i>	1.1 (3.2)	1 (3.1)	1.1 (3.4)	ns	1 (3.3)	1.1 (3.2)	ns	2.3 (4.7)	1.3 (2.9)	1 (2.5)	0.4 (1)	****
<i>Clostridium sensu stricto</i>	0.8 (3.6)	0.8 (3.6)	0.9 (3.6)	ns	0.9 (3.8)	0.8 (3.4)	ns	0.1 (1.3)	0.4 (1.9)	0.8 (2.5)	6.2 (3.7)	****
<i>Prevotellaceae unclassified</i>	0.8 (2.4)	0.9 (2.2)	0.6 (2.6)	ns	0.8 (2.5)	0.7 (2.3)	ns	0.1 (1.5)	0.4 (1.2)	0.9 (1.8)	3.9 (2.6)	****
<i>Porphyromonadaceae unclassified</i>	0.7 (0.7)	0.7 (0.7)	0.6 (0.7)	ns	0.6 (0.7)	0.7 (0.7)	ns	0.7 (0.7)	0.9 (0.8)	0.9 (0.6)	0.3 (0.4)	****
<i>Desulfovibrio</i>	0.6 (2)	0.7 (2.1)	0.6 (1.9)	ns	0.7 (2)	0.6 (2)	ns	0 (1)	0.5 (1.8)	1 (2)	1.9 (2.2)	****
<i>Bacteroidetes unclassified</i>	0.6 (2.3)	0.6 (2.4)	0.6 (2)	ns	0.6 (2.5)	0.7 (2)	ns	0 (0.5)	0.4 (1.4)	2.5 (2.9)	1.3 (2.2)	****
<i>Firmicutes unclassified</i>	0.6 (2.4)	0.8 (2.4)	0.4 (2.4)	***	0.5 (2.1)	0.7 (2.6)	ns	0.1 (3.1)	0.5 (1.7)	0.6 (1.5)	1.7 (2.5)	****
<i>Barnesiella</i>												

<i>Fusobacterium</i>	0.5 (6.8)	0.4 (6.4)	0.6 (7.2)	*	0.5 (7.3)	0.5 (6.4)	ns	10.8 (8.8)	0.6 (2.4)	0.3 (2.5)	0 (0.8)	****
<i>Butyricimonas</i>	0.4 (1.5)	0.5 (1.5)	0.4 (1.4)	ns	0.5 (1.3)	0.4 (1.6)	ns	0.2 (1.7)	1.6 (1.6)	1 (1.2)	0 (0.1)	****
<i>Streptococcus</i>	0.4 (1.5)	0.4 (1.5)	0.5 (1.5)	ns	0.3 (1.4)	0.5 (1.6)	*	1.4 (1.8)	0.5 (1.7)	0.3 (0.9)	0.1 (0.6)	****
<i>Lachnospiracea</i>	0.3 (1.1)	0.3 (1.1)	0.4 (1.1)	ns	0.3 (1)	0.3 (1.1)	ns	0.5 (1.2)	0.1 (1.1)	0.1 (0.6)	1.2 (1)	****
<i>incertae sedis</i>												
<i>Parabacteroides</i>	0.3 (1.3)	0.3 (1.3)	0.3 (1.3)	ns	0.4 (1.4)	0.2 (1.2)	****	0.3 (0.7)	1 (1.7)	0.5 (1.4)	0 (0.1)	****
<i>Oscillibacter</i>	0.3 (0.7)	0.3 (0.7)	0.2 (0.6)	**	0.4 (0.7)	0.2 (0.7)	***	0 (0.3)	0.2 (0.6)	0.4 (0.7)	1 (0.7)	****
<i>Butyricicoccus</i>	0.3 (0.7)	0.3 (0.6)	0.3 (0.7)	ns	0.2 (0.6)	0.3 (0.7)	**	0.6 (1)	0.1 (0.3)	0.1 (0.3)	0.5 (0.6)	****
<i>Veillonella</i>	0.3 (3.8)	0.2 (3.6)	0.3 (4.1)	ns	0.3 (3.9)	0.2 (3.7)	ns	4.2 (5.7)	0.3 (1.6)	0.2 (0.6)	0 (1.1)	****
<i>Clostridium XIVb</i>	0.2 (0.7)	0.2 (0.7)	0.3 (0.6)	ns	0.3 (0.7)	0.2 (0.6)	ns	0.7 (0.8)	0.2 (0.6)	0.1 (0.3)	0.3 (0.5)	****
<i>Alistipes</i>	0.2 (1.3)	0.2 (1.6)	0.2 (0.9)	ns	0.2 (1.2)	0.2 (1.4)	ns	0 (0.8)	0.7 (2)	0.6 (1)	0 (0.2)	****
<i>Sutterella</i>	0.1 (0.7)	0.1 (0.8)	0.2 (0.7)	****	0.2 (0.8)	0.1 (0.7)	***	0.5 (1.2)	0.2 (0.6)	0.1 (0.3)	0.1 (0.1)	****
<i>Dorea</i>	0.1 (0.6)	0.2 (0.7)	0.1 (0.5)	***	0.2 (0.6)	0.1 (0.6)	ns	0 (0.1)	0.1 (0.4)	0.2 (0.7)	0.5 (0.8)	****
<i>Blautia</i>	0.1 (1.2)	0.2 (1.5)	0.1 (0.8)	****	0.1 (1.5)	0.1 (1.1)	ns	0 (0.2)	0.1 (0.4)	0.1 (0.5)	0.8 (2.1)	****
<i>Bacteroidales</i>												
<i>unclassified</i>	0.1 (1.6)	0.1 (1.1)	0.1 (2.1)	ns	0.1 (1.4)	0.1 (1.8)	ns	0 (1.7)	0.1 (1.5)	0.1 (2.1)	0.4 (1.3)	****
<i>Eubacterium</i>	0.1 (1)	0.1 (1.2)	0.1 (0.7)	ns	0.1 (1.4)	0.1 (0.7)	**	0 (0.1)	0.1 (0.3)	0.1 (0.4)	0.5 (1.8)	****
<i>Actinobacillus</i>	0.1 (1.2)	0.1 (0.8)	0.1 (1.6)	ns	0.1 (1.4)	0.1 (1)	**	0.6 (2.1)	0.1 (0.7)	0.1 (0.5)	0 (0.3)	****
<i>Roseburia</i>	0.1 (1.4)	0.1 (1.3)	0.2 (1.4)	****	0.1 (1.2)	0.1 (1.5)	ns	0 (1.3)	0 (0.7)	0.1 (0.6)	1.6 (1.7)	****
<i>Flavonifractor</i>	0.1 (0.2)	0.1 (0.3)	0.1 (0.2)	**	0.1 (0.2)	0.1 (0.3)	*	0.2 (0.4)	0 (0.2)	0.1 (0.2)	0.1 (0.1)	****
<i>Collinsella</i>	0.1 (0.7)	0.1 (0.7)	0.1 (0.8)	ns	0.1 (0.9)	0.1 (0.6)	****	0 (0.2)	0.1 (0.7)	0.1 (1.2)	0.2 (0.5)	****
<i>Treponema</i>	0.1 (3.2)	0.1 (3.6)	0.1 (2.6)	ns	0.1 (3.7)	0.1 (2.7)	**	0 (0.8)	0 (4)	0.2 (4.1)	0.8 (2.4)	****
<i>Cloacibacillus</i>	0.1 (3.2)	0.1 (3.5)	0 (2.9)	****	0.1 (2.6)	0.1 (3.7)	ns	0 (0.5)	0.3 (3.3)	1.8 (4.9)	0 (0.4)	****
<i>Megasphaera</i>	0.1 (2.8)	0.1 (2.6)	0.1 (3.1)	*	0 (2.7)	0.1 (2.9)	***	0 (0.9)	0.1 (1.3)	0.2 (2.5)	0.3 (4.6)	****
<i>Clostridium IV</i>	0.1 (0.2)	0.1 (0.3)	0.1 (0.2)	ns	0.1 (0.2)	0.1 (0.3)	ns	0 (0.1)	0.1 (0.2)	0 (0.1)	0.2 (0.3)	****
<i>Pasteurella</i>	0.1 (0.7)	0.1 (0.8)	0 (0.6)	ns	0 (0.8)	0.1 (0.7)	ns	0.3 (1)	0.1 (0.7)	0 (0.4)	0 (0.6)	****
<i>Campylobacter</i>	0.1 (1.9)	0.1 (1.7)	0.1 (2.1)	ns	0 (1.9)	0.1 (1.9)	***	0 (1)	0 (1.9)	0.1 (1.3)	0.4 (2.6)	****
<i>Erysipelotrichace</i>												
<i>ae incertae sedis</i>	0.1 (0.2)	0.1 (0.2)	0.1 (0.1)	ns	0.1 (0.2)	0.1 (0.2)	*	0 (0.1)	0.1 (0.3)	0 (0.1)	0.1 (0.1)	****

