

**Specific increase of *Fusobacterium* in the faecal microbiota of neonatal calves infected with *Cryptosporidium parvum***

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**Supplementary material**

**Table S1** Age in days of six time collection for the 20 calves in farm #A.

Group	Neonatal calf ID	Age in days															
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<i>C. parvum</i> -only infected ( <i>n</i> = 8)	1		1.1			1.2			1.3			1.4			1.5		1.6
	2		2.1		2.2			2.3		2.4			2.5		2.6		
	6		6.1			6.2		6.3		6.4			6.5		6.6		
	8		8.1		8.2			8.3		8.4			8.5		8.6		
	12		12.1		12.2			12.3			12.4			12.5			12.6
	21		21.1			21.2			21.3			21.4		21.5		21.6	
	22		22.1		22.2		22.3		22.4			22.5		22.6			
	25		25.1		25.2			25.3				25.4		25.5		25.6	
total sample number		0	8	0	5	3	1	5	3	3	3	3	4	2	5	1	2
rotavirus-only infected ( <i>n</i> = 5)	28		28.1				28.2			28.3		28.4		28.5			28.6
	30		30.1		30.2			30.3		30.4		30.5		30.6			
	31		31.1		31.2			31.3		31.4		31.5		31.6			
	35		35.1			35.2		35.3		35.4			35.5		35.6		
	37		37.1		37.2			37.3		37.4			37.5		37.6		
total sample number		0	5	0	3	1	1	4	0	5	0	4	1	3	2	0	1
pathogen-negative calves ( <i>n</i> = 7)	26		26.1		26.2		26.3				26.4			26.5		26.6	
	29		29.1			29.2			29.3		29.4		29.5		29.6		
	32		32.1		32.2		32.3		32.4		32.5		32.6				
	33		33.1		33.2		33.3		33.4		33.5		33.6				
	34	34.1		34.2		34.3		34.4		34.5		34.6					
	36		36.1			36.2			36.3		36.4		36.5			36.6	
	38		38.1			38.2		38.3			38.4		38.5		38.6		
total sample number		1	6	1	3	4	3	2	4	1	6	1	5	1	2	2	0

The number of each collection was shown after a dot.

**Table S2** Distribution of bacterial relative abundance (%) among the three groups from farm #A.

genus	<i>C. parvum</i> (n = 8)	Rotavirus (n = 5)	Negative (n = 7)
1 Bacteria;_Fusobacteria;_Fusobacteria;_Fusobacteriales;_Fusobacteriaceae;_Fusobacterium	14.1	0.7	2.0
2 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Enterobacteriales;_Enterobacteriaceae;_Escherichia-Shigella	12.8	11.9	17.0
3 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Bacteroidaceae;_Bacteroides	10.8	9.3	15.3
4 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Prevotellaceae;_Prevotella	8.1	12.1	9.2
5 Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Lactobacillaceae;_Lactobacillus	7.9	10.3	9.2
6 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_ratAN060301C;_g	5.6	7.7	9.2
7 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Faecalibacterium	4.5	6.8	7.3
8 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Prevotellaceae;Other	3.8	2.1	1.0
9 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;Other	3.7	4.1	4.3
10 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Incertae_Sedis	3.4	1.7	2.6
11 Bacteria;Other;Other;Other;Other;Other	3.2	1.6	1.0
12 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Clostridiaceae;_Clostridium	2.8	0.7	2.5
13 Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Alcaligenaceae;_Sutterella	2.4	1.8	2.6
14 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Enterobacteriales;_Enterobacteriaceae;Other	2.1	5.5	2.2
15 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pasteurellales;_Pasteurellaceae;_Gallibacterium	2.0	1.6	1.3
16 Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Enterococcaceae;_Enterococcus	1.3	0.8	1.6
17 Bacteria;_Actinobacteria;_Coriobacterii;_Coriobacteriales;_Coriobacteriaceae;_Collinsella	1.2	1.1	0.9
18 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pasteurellales;_Pasteurellaceae;Other	1.1	1.1	0.9
19 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Blautia	1.0	2.8	1.6
20 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;Other;Other	0.9	0.6	0.4
21 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Porphyromonadaceae;_Parabacteroides	0.7	0.8	0.4
22 Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;Other;Other	0.6	0.6	0.3
23 Bacteria;_Proteobacteria;_Epsilonproteobacteria;_Campylobacteriales;_Campylobacteraceae;_Campylobacter	0.5	0.1	0.0
24 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Enterobacteriales;_Enterobacteriaceae;_Proteus	0.5	0.0	0.0
25 Bacteria;_Actinobacteria;_Actinobacteria;_Bifidobacteriales;_Bifidobacteriaceae;Other	0.5	2.7	0.9
26 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Incertae_Sedis	0.4	0.9	0.4
27 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Aeromonadales;_Succinivibrionaceae;_Succinivibrio	0.4	2.1	1.2
28 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Dorea	0.3	1.4	0.7
29 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Peptostreptococcaceae;_Incertae_Sedis	0.3	0.6	0.5
30 Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Streptococcaceae;_Streptococcus	0.3	0.4	0.3
31 Bacteria;_Firmicutes;Other;Other;Other;Other	0.2	0.2	0.2
32 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Allisonella	0.2	0.2	0.2
33 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Anaerovibrio	0.2	0.1	0.0
34 Bacteria;_Actinobacteria;_Actinobacteria;_Bifidobacteriales;_Bifidobacteriaceae;_Gardnerella	0.2	0.3	0.4
35 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Subdoligranulum	0.2	0.6	0.1
36 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Rikenellaceae;_RC9_gut_group	0.1	0.2	0.1
37 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;Other	0.1	0.2	0.0
38 Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Alcaligenaceae;Other	0.1	0.0	0.0
39 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Peptostreptococcaceae;_Peptostreptococcus	0.1	0.0	0.0
40 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Megamonas	0.1	0.0	0.0
41 Bacteria;_Actinobacteria;_Actinobacteria;_Bifidobacteriales;_Bifidobacteriaceae;_Bifidobacterium	0.1	0.0	0.0
42 Bacteria;_Proteobacteria;_Deltaproteobacteria;_Desulfovibrionales;_Desulfovibrionaceae;_Desulfovibrio	0.1	0.0	0.0
43 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Moryella	0.1	0.0	0.1
44 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;Other	0.1	0.1	0.1
45 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Marvinbryantia	0.1	0.1	0.2
46 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Aeromonadales;_Aeromonadaceae;_Aeromonas	0.1	0.0	0.0
47 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Prevotellaceae;_g	0.1	0.0	0.0
48 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Porphyromonadaceae;_Odoribacter	0.1	0.0	0.0
49 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pasteurellales;_Pasteurellaceae;_Mannheimia	0.0	0.0	0.0
50 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pasteurellales;_Pasteurellaceae;_Pasteurella	0.0	0.0	0.0
51 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_S24-7;_g	0.0	0.1	0.0
52 Bacteria;_Firmicutes;_Erysipelotrichi;_Erysipelotrichales;_Erysipelotrichaceae;_Turicibacter	0.0	0.0	0.0
53 Bacteria;_Actinobacteria;_Coriobacterii;_Coriobacteriales;_Coriobacteriaceae;_Atopobium	0.0	0.1	0.0
54 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Veillonella	0.0	0.0	0.0
55 Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Alcaligenaceae;_Parasutterella	0.0	0.1	0.0
56 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Clostridiaceae;Other	0.0	0.0	0.0
57 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Howardella	0.0	0.0	0.0
58 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Rikenellaceae;_Alistipes	0.0	0.0	0.0
59 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Enterobacteriales;_Enterobacteriaceae;_Klebsiella	0.0	0.0	0.1
60 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Porphyromonadaceae;_Butyricimonas	0.0	0.0	0.0
61 Bacteria;_Fusobacteria;_Fusobacteria;_Fusobacteriales;_Fusobacteriaceae;Other	0.0	0.0	0.0
62 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XIII_Incertae_Sedis;_Mogibacterium	0.0	0.0	0.0
63 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Mitsuokella	0.0	0.0	0.0
64 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Anaerotruncus	0.0	0.0	0.0
65 Bacteria;_Actinobacteria;_Actinobacteria;_Corynebacteriales;Other;Other	0.0	0.0	0.0
66 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Peptostreptococcaceae;Other	0.0	0.0	0.0
67 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Clostridiaceae;_Sarcina	0.0	0.2	0.1
68 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Phascolarctobacterium	0.0	0.1	0.0
69 Bacteria;_Firmicutes;_Bacilli;Other;Other;Other	0.0	0.0	0.0
70 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Syntrophococcus	0.0	0.0	0.0
71 Bacteria;_Actinobacteria;_Actinobacteria;_Actinomycetales;_Actinomycetaceae;_Actinomyces	0.0	0.0	0.0
72 Bacteria;_Fusobacteria;_Fusobacteria;_Fusobacteriales;Other;Other	0.0	0.0	0.0
73 Bacteria;_Proteobacteria;_Gammaproteobacteria;_Aeromonadales;_Succinivibrionaceae;Other	0.0	0.0	0.0
74 Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Lactobacillaceae;Other	0.0	0.0	0.0
75 Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Comamonadaceae;Other	0.0	0.2	0.1
76 Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Porphyromonadaceae;Other	0.0	0.0	0.0
77 Bacteria;_Actinobacteria;_Coriobacterii;_Coriobacteriales;_Coriobacteriaceae;Other	0.0	0.0	0.0
78 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;Other;Other	0.0	0.0	0.0
79 Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;Other;Other	0.0	0.0	0.0
80 Bacteria;_Proteobacteria;_Gammaproteobacteria;Other;Other;Other	0.0	0.0	0.0
81 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Pseudobutyrvibrio	0.0	0.0	0.0
82 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_g	0.0	0.1	0.0
83 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XIII_Incertae_Sedis;_Incertae_Sedis	0.0	0.0	0.0
84 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Butyrvibrio	0.0	0.0	0.0
85 Bacteria;_Actinobacteria;_Actinobacteria;_Corynebacteriales;_Corynebacteriaceae;_Corynebacterium	0.0	0.0	0.0
86 Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Papillibacter	0.0	0.0	0.0
87 Bacteria;_Firmicutes;_Erysipelotrichi;_Erysipelotrichales;_Erysipelotrichaceae;_Incertae_Sedis	0.0	0.0	0.0

88	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Aeromonadales;_Succinivibrionaceae;_g	0.0	0.0	0.0
89	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Acidaminococcus	0.0	0.0	0.0
90	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_p-2534-18B5_gut_group;_g	0.0	0.0	0.0
91	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Rikenellaceae;Other	0.0	0.0	0.0
92	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XI_Incertae_Sedis;_Parvimonas	0.0	0.0	0.0
93	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Peptococcaceae;_Peptococcus	0.0	0.0	0.0
94	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XI_Incertae_Sedis;_Anaerococcus	0.0	0.0	0.0
95	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pseudomonadales;_Moraxellaceae;_Acinetobacter	0.0	0.1	0.0
96	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Eubacteriaceae;_Eubacterium	0.0	0.0	0.0
97	Bacteria;_Proteobacteria;_Deltaproteobacteria;_Desulfovibrionales;_Desulfovibrionaceae;_Bilophila	0.0	0.0	0.0
98	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pseudomonadales;_Pseudomonadaceae;Other	0.0	0.0	0.0
99	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Dialister	0.0	0.0	0.0
100	Bacteria;_Actinobacteria;_Actinobacteria;_Actinomycetales;_Actinomycetaceae;_Trueperella	0.0	0.0	0.0
101	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XIII_Incertae_Sedis;Other	0.0	0.0	0.0
102	Bacteria;_Lentisphaerae;_Lentisphaeria;_Victivallales;_Victivallaceae;_Victivallis	0.0	0.0	0.0
103	Bacteria;_Proteobacteria;_Deltaproteobacteria;_Desulfovibrionales;_Desulfovibrionaceae;Other	0.0	0.0	0.0
104	Bacteria;_Fusobacteria;_Fusobacteria;_Fusobacteriales;_CFT112H7;_g	0.0	0.0	0.0
105	Bacteria;_Actinobacteria;_Coriobacterii;_Coriobacteriales;_Coriobacteriaceae;_Eggerthella	0.0	0.0	0.0
106	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Porphyromonadaceae;_Porphyromonas	0.0	0.0	0.0
107	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Planococcaceae;_Lysinibacillus	0.0	0.0	0.1
108	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pseudomonadales;_Moraxellaceae;_Psychrobacter	0.0	0.0	0.0
109	Bacteria;_Proteobacteria;Other;Other;Other;Other	0.0	0.0	0.0
110	Bacteria;_Bacteroidetes;Other;Other;Other;Other	0.0	0.0	0.0
111	Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Streptococcaceae;_Lactococcus	0.0	0.0	0.0
112	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XI_Incertae_Sedis;_Helcococcus	0.0	0.0	0.0
113	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Megasphaera	0.0	0.1	0.0
114	Bacteria;_Fusobacteria;_Fusobacteria;_Fusobacteriales;_boneC3G7;_g	0.0	0.0	0.0
115	Bacteria;_Proteobacteria;_Alphaproteobacteria;Other;Other;Other	0.0	0.0	0.0
116	Bacteria;_Actinobacteria;_Actinobacteria;_Actinomycetales;_Actinomycetaceae;Other	0.0	0.0	0.0
117	Bacteria;_Proteobacteria;_Epsilonproteobacteria;_Campylobacterales;_Helicobacteraceae;_Helicobacter	0.0	0.0	0.0
118	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Negativicoccus	0.0	0.0	0.0
119	Bacteria;_Firmicutes;_Erysipelotrichi;_Erysipelotrichales;_Erysipelotrichaceae;Other	0.0	0.0	0.0
120	Bacteria;_Proteobacteria;_Betaproteobacteria;Other;Other;Other	0.0	0.0	0.0
121	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Micrococcaceae;_Nesterenkonia	0.0	0.0	0.0
122	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Porphyromonadaceae;_Barnesiella	0.0	0.0	0.0
123	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;_Flavobacteriaceae;Other	0.0	0.0	0.0
124	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XI_Incertae_Sedis;_Finegoldia	0.0	0.0	0.0
125	Bacteria;_Actinobacteria;_Actinobacteria;_Corynebacteriales;_Dietziaceae;_Dietzia	0.0	0.0	0.0
126	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;_Flavobacteriaceae;_Weeksella	0.0	0.0	0.0
127	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Vibrionales;_Vibrionaceae;Other	0.0	0.0	0.0
128	Bacteria;_Firmicutes;_Erysipelotrichi;_Erysipelotrichales;_Erysipelotrichaceae;_Sharpea	0.0	0.0	0.0
129	Bacteria;_Actinobacteria;_Actinobacteria;Other;Other;Other	0.0	0.0	0.0
130	Bacteria;_Actinobacteria;_Actinobacteria;_Corynebacteriales;_Nocardiaceae;_Rhodococcus	0.0	0.0	0.0
131	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;Other;Other	0.0	0.0	0.0
132	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhodospirillales;_Rhodospirillaceae;_Thalassospira	0.0	0.0	0.0
133	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pseudomonadales;_Pseudomonadaceae;_Pseudomonas	0.0	0.0	0.0
134	Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Alcaligenaceae;_Oligella	0.0	0.1	0.0
135	Bacteria;_Actinobacteria;Other;Other;Other;Other	0.0	0.0	0.0
136	Bacteria;_Actinobacteria;_Actinobacteria;_Propionibacteriales;_Propionibacteriaceae;_Propionibacterium	0.0	0.1	0.1
137	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Porphyromonadaceae;_Dysgonomonas	0.0	0.0	0.0
138	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Eubacteriaceae;_Pseudoramibacter	0.0	0.0	0.0
139	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XI_Incertae_Sedis;_Peptoniphilus	0.0	0.0	0.0
140	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Anaerofilum	0.0	0.0	0.0
141	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Flavonifractor	0.0	0.0	0.0
142	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Caulobacterales;_Caulobacteraceae;_Brevundimonas	0.0	0.0	0.0
143	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhizobiales;_Brucellaceae;_Ochrobactrum	0.0	0.0	0.0
144	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Sphingomonadales;_Sphingomonadaceae;Other	0.0	0.4	0.2
145	Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Oxalobacteraceae;_Undibacterium	0.0	0.0	0.0
146	Bacteria;_Proteobacteria;_Betaproteobacteria;_Neisseriales;_Neisseriaceae;Other	0.0	0.0	0.0
147	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pseudomonadales;_Moraxellaceae;_Alkanindiges	0.0	0.0	0.0
148	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Xanthomonadales;_Xanthomonadaceae;_Stenotrophomonas	0.0	0.1	0.0
149	Bacteria;_Actinobacteria;_Actinobacteria;_Actinomycetales;_Actinomycetaceae;_Mobiluncus	0.0	0.0	0.0
150	Bacteria;_Actinobacteria;_Actinobacteria;_Bifidobacteriales;_Bifidobacteriaceae;_Alloscardovia	0.0	0.0	0.0
151	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;Other;Other	0.0	0.0	0.0
152	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Microbacteriaceae;_Amnibacterium	0.0	0.0	0.0
153	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Microbacteriaceae;_Curtobacterium	0.0	0.0	0.0
154	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Microbacteriaceae;_Microbacterium	0.0	0.0	0.0
155	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Micrococcaceae;Other	0.0	0.0	0.0
156	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Micrococcaceae;_Micrococcus	0.0	0.0	0.0
157	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Micrococcaceae;_Rothia	0.0	0.0	0.0
158	Bacteria;_Actinobacteria;_Actinobacteria;_Streptomycetales;_Streptomycetaceae;_Streptomyces	0.0	0.0	0.0
159	Bacteria;_Actinobacteria;_Coriobacterii;_Coriobacteriales;_Coriobacteriaceae;_g	0.0	0.0	0.0
160	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;_Flavobacteriaceae;_Bergeyella	0.0	0.0	0.0
161	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;_Flavobacteriaceae;_Capnocytophaga	0.0	0.0	0.0
162	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;_Flavobacteriaceae;_Myroides	0.0	0.0	0.0
163	Bacteria;_Bacteroidetes;_Sphingobacterii;_Sphingobacteriales;_Chitinophagaceae;_g	0.0	0.0	0.0
164	Bacteria;_Bacteroidetes;_Sphingobacterii;_Sphingobacteriales;_Sphingobacteriaceae;_Olivibacter	0.0	0.0	0.0
165	Bacteria;_Bacteroidetes;_Sphingobacterii;_Sphingobacteriales;_Sphingobacteriaceae;_Sphingobacterium	0.0	0.0	0.0
166	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Planococcaceae;Other	0.0	0.0	0.0
167	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Planococcaceae;_Sporosarcina	0.0	0.0	0.0
168	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Staphylococcaceae;_Jeotgaliococcus	0.0	0.0	0.0
169	Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Aerococcaceae;_Eremococcus	0.0	0.0	0.0
170	Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Carnobacteriaceae;_Atopostipes	0.0	0.0	0.0
171	Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_MOB164;_g	0.0	0.0	0.0
172	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Christensenellaceae;_g	0.0	0.0	0.0
173	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XI_Incertae_Sedis;Other	0.0	0.0	0.0
174	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Anaerostipes	0.0	0.0	0.1
175	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Cellulosilyticum	0.0	0.0	0.0
176	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Lachnospira	0.0	0.0	0.0

177	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Fastidiosipila	0.0	0.0	0.0
178	Bacteria;_Fusobacteria;_Fusobacteria;_Fusobacteriales;_Fusobacteriaceae;_Cetobacterium	0.0	0.0	0.0
179	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Caulobacterales;_Caulobacteraceae;_Asticcacaulis	0.0	0.0	0.0
180	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhizobiales;Other;Other	0.0	0.0	0.0
181	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhizobiales;_Phyllobacteriaceae;Other	0.0	0.1	0.0
182	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhizobiales;_Rhizobiaceae;_Rhizobium	0.0	0.3	0.1
183	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rickettsiales;_mitochondria;_g	0.0	0.0	0.0
184	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Sphingomonadales;_Sphingomonadaceae;_Novospingobium	0.0	0.0	0.0
185	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Sphingomonadales;_Sphingomonadaceae;_Sphingomonas	0.0	0.1	0.1
186	Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Burkholderiaceae;_Ralstonia	0.0	0.0	0.0
187	Bacteria;_Proteobacteria;_Epsilonproteobacteria;_Campylobacterales;_Campylobacteraceae;Other	0.0	0.0	0.0
188	Bacteria;_Synergistetes;_Synergistia;_Synergistales;_Synergistaceae;_Pyramidobacter	0.0	0.0	0.0
189	Eukaryota;Other;Other;Other;Other;Other	0.0	0.0	0.0
190	Bacteria;_Actinobacteria;_Actinobacteria;_Corynebacteriales;_Mycobacteriaceae;_Mycobacterium	0.0	0.0	0.0
191	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Brevibacteriaceae;_Brevibacterium	0.0	0.0	0.0
192	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Dermacoccaceae;_Dermacoccus	0.0	0.0	0.0
193	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Intrasporangiaceae;Other	0.0	0.0	0.0
194	Bacteria;_Actinobacteria;_Actinobacteria;_Micrococcales;_Microbacteriaceae;_Leucobacter	0.0	0.0	0.0
195	Bacteria;_Actinobacteria;_Actinobacteria;_Micromonosporales;_Micromonosporaceae;Other	0.0	0.0	0.0
196	Bacteria;_Actinobacteria;_Actinobacteria;_Pseudonocardiales;_Pseudonocardaceae;Other	0.0	0.0	0.0
197	Bacteria;_Actinobacteria;_Actinobacteria;_Pseudonocardiales;_Pseudonocardaceae;_Saccharopolyspora	0.0	0.0	0.0
198	Bacteria;_Actinobacteria;_Actinobacteria;_Streptosporangiales;_Nocardiopsaceae;_Nocardiopsis	0.0	0.0	0.0
199	Bacteria;_Actinobacteria;_Coriobacteriia;_Coriobacteriales;_Coriobacteriaceae;_Paraeggerthella	0.0	0.0	0.0
200	Bacteria;_Actinobacteria;_Coriobacteriia;_Coriobacteriales;_Coriobacteriaceae;_Slackia	0.0	0.0	0.0
201	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Prevotellaceae;_Paraprevotella	0.0	0.0	0.0
202	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_Prevotellaceae;_Xylanibacter	0.0	0.0	0.0
203	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_RF16;_g	0.0	0.0	0.0
204	Bacteria;_Bacteroidetes;_Bacteroidia;_Bacteroidales;_uncultured;_g	0.0	0.0	0.0
205	Bacteria;_Bacteroidetes;_Cytophagia;_Cytophagales;_Cytophagaceae;_Dyadobacter	0.0	0.0	0.0
206	Bacteria;_Bacteroidetes;_Cytophagia;_Cytophagales;_Cytophagaceae;_Hymenobacter	0.0	0.0	0.0
207	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;_Flavobacteriaceae;_Chryseobacterium	0.0	0.0	0.0
208	Bacteria;_Bacteroidetes;_Flavobacteria;_Flavobacteriales;_Flavobacteriaceae;_Elizabethkingia	0.0	0.0	0.0
209	Bacteria;_Bacteroidetes;_Sphingobacteriia;_Sphingobacteriales;Other;Other	0.0	0.0	0.0
210	Bacteria;_Bacteroidetes;_Sphingobacteriia;_Sphingobacteriales;_Chitinophagaceae;_Chitinophaga	0.0	0.1	0.0
211	Bacteria;_Bacteroidetes;_Sphingobacteriia;_Sphingobacteriales;_Chitinophagaceae;_Flavisolibacter	0.0	0.0	0.0
212	Bacteria;_Bacteroidetes;_Sphingobacteriia;_Sphingobacteriales;_Sphingobacteriaceae;Other	0.0	0.0	0.0
213	Bacteria;_Chlamydiae;_Chlamydiae;_Chlamydiales;_Chlamydiaceae;Other	0.0	0.0	0.0
214	Bacteria;_Elusimicrobia;_Elusimicrobia;Other;Other;Other	0.0	0.0	0.0
215	Bacteria;_Firmicutes;_Bacilli;_Bacillales;Other;Other	0.0	0.0	0.0
216	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Alicyclobacillaceae;_Tumebacillus	0.0	0.1	0.0
217	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Bacillaceae;Other	0.0	0.1	0.0
218	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Bacillaceae;_Anaerobacillus	0.0	0.1	0.0
219	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Bacillaceae;_Geobacillus	0.0	0.0	0.0
220	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Paenibacillaceae;_Brevibacillus	0.0	0.0	0.0
221	Bacteria;_Firmicutes;_Bacilli;_Bacillales;_Planococcaceae;_Planococcus	0.0	0.0	0.0
222	Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Aerococcaceae;_Globicatella	0.0	0.0	0.0
223	Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Aerococcaceae;_Ignavigranum	0.0	0.1	0.0
224	Bacteria;_Firmicutes;_Bacilli;_Lactobacillales;_Leuconostocaceae;_Leuconostoc	0.0	0.0	0.0
225	Bacteria;_Firmicutes;_Clostridia;Other;Other;Other	0.0	0.0	0.0
226	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Christensenellaceae;_Christensenella	0.0	0.0	0.0
227	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Eubacteriaceae;_Anaerofustis	0.0	0.0	0.0
228	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Family_XIII_Incertae_Sedis;_g	0.0	0.0	0.0
229	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Acetitomaculum	0.0	0.0	0.0
230	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_Roseburia	0.0	0.0	0.0
231	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Lachnospiraceae;_g	0.0	0.0	0.0
232	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Peptococcaceae;Other	0.0	0.0	0.0
233	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Ruminococcaceae;_Oscillospira	0.0	0.0	0.0
234	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_Veillonellaceae;_Succiniclaticum	0.0	0.0	0.0
235	Bacteria;_Firmicutes;_Clostridia;_Clostridiales;_uncultured;_g	0.0	0.0	0.0
236	Bacteria;_Firmicutes;_Erysipelotrichi;_Erysipelotrichales;_Erysipelotrichaceae;_Solobacterium	0.0	0.0	0.0
237	Bacteria;_Lentisphaerae;_Lentisphaeria;_RFP12_gut_group;_f;_g	0.0	0.0	0.0
238	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhizobiales;_Methylobacteriaceae;_Methylobacterium	0.0	0.1	0.0
239	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhizobiales;_Rhizobiaceae;Other	0.0	0.0	0.0
240	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhodobacterales;_Rhodobacteraceae;Other	0.0	0.0	0.0
241	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Rhodobacterales;_Rhodobacteraceae;_Paracoccus	0.0	0.0	0.0
242	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Sphingomonadales;Other;Other	0.0	0.0	0.0
243	Bacteria;_Proteobacteria;_Alphaproteobacteria;_Sphingomonadales;_Sphingomonadaceae;_Sphingobium	0.0	0.0	0.0
244	Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Alcaligenaceae;_Alcaligenes	0.0	0.0	0.0
245	Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Comamonadaceae;_Pelomonas	0.0	0.1	0.0
246	Bacteria;_Proteobacteria;_Betaproteobacteria;_Burkholderiales;_Oxalobacteraceae;Other	0.0	0.0	0.0
247	Bacteria;_Proteobacteria;_Betaproteobacteria;_Neisseriales;_Neisseriaceae;_Microvirgula	0.0	0.0	0.0
248	Bacteria;_Proteobacteria;_Deltaproteobacteria;_Myxococcales;Other;Other	0.0	0.0	0.0
249	Bacteria;_Proteobacteria;_Deltaproteobacteria;_Myxococcales;_0319-6G20;_g	0.0	0.0	0.0
250	Bacteria;_Proteobacteria;_Epsilonproteobacteria;_Campylobacterales;_Campylobacteraceae;_Arcobacter	0.0	0.0	0.0
251	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Aeromonadales;Other;Other	0.0	0.0	0.0
252	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Aeromonadales;_Aeromonadaceae;_Zobellella	0.0	0.0	0.0
253	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Alteromonadales;Other;Other	0.0	0.0	0.0
254	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Alteromonadales;_Shewanellaceae;_Shewanella	0.0	0.0	0.0
255	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Chromatiales;_Chromatiaceae;_Rheinheimera	0.0	0.0	0.0
256	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pasteurellales;_Pasteurellaceae;_Haemophilus	0.0	0.0	0.0
257	Bacteria;_Proteobacteria;_Gammaproteobacteria;_Pseudomonadales;_Moraxellaceae;_Moraxella	0.0	0.0	0.0
258	Bacteria;_Spirochaetes;_Spirochaetes;_Spirochaetales;_Spirochaetaceae;_Spirochaeta	0.0	0.0	0.0
259	Bacteria;_Spirochaetes;_Spirochaetes;_Spirochaetales;_Spirochaetaceae;_Treponema	0.0	0.0	0.0
260	Bacteria;_Tenericutes;_Mollicutes;_RF9;_f;_g	0.0	0.0	0.0
261	Unclassified;Other;Other;Other;Other;Other	0.0	0.0	0.0

Average value of the six-times collections.

## Figure legends

**Figure S1** Prefectures in Japan from which the faecal samples from neonatal calves were collected. Black points indicate the approximate locations of the farm(s). The map was obtained from CraftMAP (<http://www.craftmap.box-i.net/>) and edited by Microsoft® PowerPoint® 2013.

