

Table S1. *Salmonella* confirmation by the Animal Health Laboratory of the Quebec Ministry of Agriculture.

Sample	Bedding type	Bedding status	Serogroup
11012100	RMS	Unused	Salmonella K
11052100	RMS	Unused	Salmonella K
11272100	RMS	Unused	Salmonella K
11052200	RMS	Used	Salmonella K
11182200	RMS	Used	Salmonella C1
11222200	RMS	Used	Salmonella B
11272200	RMS	Used	Salmonella K
12352100	Straw	Unused	Salmonella K
12392200	Straw	Used	Salmonella K

Table S2. PCR primers used in *Listeria monocytogenes* detection in bedding samples.

Gene	Gene Role	Primer	Primer	Primer Sequence
	(Identification)		Concentration	(5'–3')
			(μ M)	
prfA	<i>L. monocytogenes</i>	LIP1	0.2	GATACAGAAACATCGGTTGGC
	species	LIP2	0.2	GTGTAATCTTGATGCCATCAGG
prs	Listeria genus	prsF	0.2	GCTGAAGAGATTGCGAAAGAAG
		prsR	0.2	CAAAGAAACCTTGGATTTGCGG
Lmo 1118	Genosero-group	lmo1118	0.6	AGGGGTCTTAAATCCTGGAA
		F		
		lmo1118	0.6	CGGCTTGTTCCGGCATACTTA
Orf 2819	Genosero-group	R		
		orf2819F	0.4	AGCAAAATGCCAAACTCGT
		orf2819R	0.4	CATCACTAAAGCCTCCCATTG
Orf 2110	Genosero-group	IVb		
		orf2110F	0.4	AGTGGACAATTGATTGGTGAA
		orf2110R	0.4	CATCCATCCCTTACTTTGGAC
Lmo 0737	Genosero-group	lmo0737	0.4	AGGGCTTCAAGGACTTACCC
		F		
		lmo0737	0.4	ACGATTTCTGCTTGCCATTC
		R		

Adapted from K  rouanton et al., 2010

Table S3. List of unique genera in unused RMS bedding or in unused straw.

RMS	# OTU	Phylum	34
	70	Proteobacteria	Escherichia/Shigella
	169	Actinobacteria	Thermobispora
	244	Proteobacteria	Idiomarina
	301	Proteobacteria	Rheinheimera
	309	Proteobacteria	Schlegelella
	356	Actinobacteria	Thermopolyspora
	363	Proteobacteria	Sandarakinorhabdus
	382	Verrucomicrobia	Verrucomicrobiales_unclassified
	422	Proteobacteria	Alteromonadales_unclassified
	425	Proteobacteria	Chelatococcus
	437	Proteobacteria	Methylobacillus
	444	Firmicutes	Halocella
	551	Chloroflexi	Sphaerobacter
	555	Actinobacteria	Cellulomonas
	607	Actinobacteria	Jonesia
	630	Firmicutes	Ammoniiibacillus
	634	Proteobacteria	Yersinia
	636	Proteobacteria	Neisseriaceae_unclassified
	637	Firmicutes	Tepidimicrobium
	663	Firmicutes	Sinibacillus
	695	Proteobacteria	Ignatzschineria
	708	Firmicutes	Paenisporosarcina
	715	Proteobacteria	Rhodopirellula
	722	Firmicutes	Sphingorhabdus
	727	Planctomycetes	Planctomicrobium
	731	Firmicutes	Clostridium_III
	738	Proteobacteria	Marinobacter
	755	Actinobacteria	Actinotalea
	815	Actinobacteria	Piscicoccus
	825	Actinobacteria	Nomomuraea
	877	Firmicutes	Ornithinibacillus
	950	Proteobacteria	Bradymonas
	966	Bacteroidetes	Cryomorpha
	973	Firmicutes	Megasphaera
	977	Actinobacteria	Leifsonia
	994	Actinobacteria	Demequina
	1004	Proteobacteria	Nannocystaceae_unclassified
	1015	Actinobacteria	Gulosibacter
	1020	Actinobacteria	Gordonia
	1024	Bacteroidetes	Brumimicrobium
	1043	Actinobacteria	Thermomonosporaceae_unclassified
	1045	Proteobacteria	Nannocystis
	1055	Fibrobacteres	Fibrobacteres_unclassified
	1082	Firmicutes	Saccharococcus
	1095	Proteobacteria	Bordetella
	1112	Proteobacteria	Vulgatibacter

1127	Proteobacteria	Moraxellaceae_unclassified
1174	Firmicutes	Peptostreptococcus
1208	Verrucomicrobia	Puniceicoccaceae_unclassified
1229	Firmicutes	Geobacillus
1235	Bacteroidetes	Proteiniphilum
1259	Firmicutes	Sedimentibacter
1266	Chloroflexi	Litorilinea
1281	Actinobacteria	Ornithinococcus
1311	Bacteroidetes	Flavobacteriales_unclassified
1358	Actinobacteria	Georgenia
1390	Firmicutes	Acidaminococcaceae_unclassified
1397	Actinobacteria	Glycomyces
1401	Proteobacteria	Oceanospirillaceae_unclassified
1427	Proteobacteria	Lysobacter
1432	Actinobacteria	Corynebacteriaceae_unclassified
1435	Proteobacteria	Pseudohongiella
1477	Actinobacteria	Thermomonospora
1538	Proteobacteria	Maricurvus
1541	Firmicutes	Brevibacillus
1561	Firmicutes	Holdemania
1576	Proteobacteria	Steroidobacter
1609	Actinobacteria	Thermasporomyces
1615	Fusobacteria	Fusobacterium
1622	Bacteroidetes	Muricauda
1623	Proteobacteria	Vibrio
1637	Proteobacteria	proteus
1638	Proteobacteria	Ferrovibrio
1682	Firmicutes	Fastidiosipila
1686	Proteobacteria	Thauera
1688	Proteobacteria	Campylobacter
1729	Proteobacteria	Castellaniella
1735	Proteobacteria	Sandaracinus
1754	Proteobacteria	Alteromonadaceae_unclassified
1756	Actinobacteria	Actinomyces
1761	Chloroflexi	Chloroflexales_unclassified
1791	Firmicutes	Trichococcus
1815	Firmicutes	Defluviitalea
1824	Firmicutes	Mobilitalea
1851	Proteobacteria	Alcaligenes
1852	Bacteroidetes	Mariniphaga
1886	Actinobacteria	Cellulosimicrobium
1902	Proteobacteria	Sinobacteraceae_unclassified
1907	SR1	SR1_unclassified
1924	Bacteroidetes	Bergeyella
1963	Firmicutes	Tepidanaerobacter
1971	Firmicutes	Proteiniborus
1972	Proteobacteria	Sorangium
2039	Synergistetes	Synergistaceae_unclassified
2159	Firmicutes	Ercella

2161	Fibrobacteres	Fibrobacter
2173	Bacteroidetes	Dysgonomonas
2194	Proteobacteria	Parvibaculum
2205	Firmicutes	Gallicola
2207	Bacteroidetes	Gelidibacter
2263	Proteobacteria	Herminiimonas
2304	BRC1	BRC1_unclassified
2305	Planctomycetes	Blastopirellula
2310	Proteobacteria	Constrictibacter
2325	Euryarchaeota	Methanosarcina
2403	Firmicutes	Halolactibacillus
2463	Proteobacteria	Kerstesia
2483	Proteobacteria	Chondromyces
2488	Chloroflexi	Oscillochloris
2534	Firmicutes	Lactobacillaceae_unclassified
2547	Actinobacteria	Bifidobacteriaceae_unclassified
2549	Proteobacteria	Oceanibaculum
2557	Firmicutes	Helcococcus
2594	Proteobacteria	Marinobacterium
2608	Euryarchaeota	Methanocorpusculum
2633	Bacteroidetes	Odoribacter
2706	Firmicutes	Saccharofermentans
2727	Firmicutes	Paenivacillaceae_2_unclassified
2751	Euryarchaeota	Methanobacterium
2759	Firmicutes	Thermoactinomycetaceae_1_unclassified
2775	Proteobacteria	Oceanospirillales_unclassified
2802	Actinobacteria	Stackebrandtia
2803	Firmicutes	Parasporobacterium
2825	Firmicutes	Acetoanaerobium
2946	Proteobacteria	Serpens
2958	Proteobacteria	Desulfovibrio
2969	Bacteroidetes	Flammeovirgaceae_unclassified
2983	Actinobacteria	Bogoriellaceae_unclassified
2994	Proteobacteria	Sutterella
2996	Bacteroidetes	Arenibacter
3035	Firmicutes	Guggenheimella
3048	Bacteroidetes	Galbibacter
3067	Bacteroidetes	Rhodothermaceae_unclassified
3090	Firmicutes	Peptoniphilus
3096	Proteobacteria	Burkholderiaceae_unclassified
3118	Proteobacteria	Nitrosomonas
3249	Proteobacteria	Rhodoligotrophos
3262	Proteobacteria	Asticcacaulis
3319	Proteobacteria	Sandaracinobacter
3350	Bacteroidetes	Anaerocella
3471	Firmicutes	Thermaerobacter
3476	Bacteroidetes	Macellibacteroides
3478	Proteobacteria	Halobacteriovorax
3487	Firmicutes	Butyricicoccus

3497	Bacteroidetes	Mariniflexile
3503	Firmicutes	Eubacteriaceae_unclassified
3506	Firmicutes	Caldicoprobacter
3528	Firmicutes	Selenomonas
3597	Proteobacteria	Desulfovibrionaceae_unclassified
3608	Bacteroidetes	Vitellibacter
3676	Proteobacteria	Morganella
3778	Proteobacteria	Maricella_unclassified
3800	Proteobacteria	Zobellella
3821	Proteobacteria	GammaProteobacteria_incertae_sedis_unclassified
3905	Firmicutes	Alkalibaculum
3918	Firmicutes	Sharpea
3938	Proteobacteria	Brucellaceae_unclassified
3951	Synergistetes	Aminivibrio
4095	Proteobacteria	Shewanella
4109	Firmicutes	Proteocatella
4131	Bacteroidetes	Prolixibacteraceae_unclassified
4277	Bacteroidetes	Geofilum
4287	Proteobacteria	Paenochrobactrum
4322	Actinobacteria	Parvibacter
4359	Proteobacteria	Sneathiella
4375	Actinobacteria	Tetrasphaera
4416	Bacteroidetes	Ricknellaceae_unclassified
4421	Bacteroidetes	Winogradskyella
4638	Proteobacteria	Thiopseudomonas
4645	Proteobacteria	Pseudochrobactrum
4721	Firmicutes	Acidaminococcus
4728	Proteobacteria	Candidimonas
4856	Actinobacteria	Thermocrispum
4943	Actinobacteria	Atopobium
5061	Firmicutes	Caldanaerovirga
5069	Firmicutes	Ammoniphilus
5302	Firmicutes	Syntrophococcus
5303	Bacteroidetes	Sporocytophaga
5408	Firmicutes	Succiniclasicum
5438	Firmicutes	Kandleria
5558	Actinobacteria	Denitrobacterium
5571	Firmicutes	Alkaliphilus
5583	Firmicutes	Allisonella
5629	Proteobacteria	Pseudocheilatozoon
5651	Firmicutes	Caldalkalibacillus
5705	Verrucomicrobia	Cerasicoccus
5977	Firmicutes	Desulfotomaculum
6012	Proteobacteria	Pelistega
6110	Proteobacteria	Bacteriovoracaceae_unclassified
6122	Firmicutes	Pseudobutyrvibrio
6240	Actinobacteria	Ilumatobacter
6352	Spirochaetes	Spirochaetaceae_unclassified
6474	Actinobacteria	Propionibacteriaceae_unclassified

	6524	Chloroflexi	Thermomicrobia_unclassified
	6683	Verrucomicrobia	opitutae_unclassified
	6836	Actinobacteria	Asaccharobacter
	6876	Firmicutes	Butyrivibrio
	6889	Firmicutes	Schwartzia
	6901	Chloroflexi	Caldilineaceae_unclassified
	7035	Proteobacteria	Chromatiales_unclassified
	7743	Firmicutes	Aeribacillus
	7938	Firmicutes	Anaerosphaera
	7947	Firmicutes	Eubacterium
	7952	Actinobacteria	Iamia
	7961	Firmicutes	Cohnella
	8212	Firmicutes	Anaerofilum
	8281	Euryarchaeota	Methanomassiliicoccus
	8452	Euryarchaeota	Methanoculleus
	8748	Firmicutes	Hespellia
	8858	Firmicutes	Clostridiales_Incertae_Sedis_III_unclassified
	8965	Firmicutes	Peptococcus
	9772	Actinobacteria	Tessaracoccus
	12152	Spirochaetes	Sphaerochaeta
	13187	Firmicutes	Desulfonispota
	28643	Proteobacteria	Xanthomonadales_unclassified
	29926	Proteobacteria	Pseudomonadales_unclassified
	36110	Firmicutes	Tepidibacillus
Straw	65	Proteobacteria	Polaromonas
	168	Actinobacteria	Rathayibacter
	170	Actinobacteria	Kineococcus
	232	Actinobacteria	Curtobacterium
	250	Proteobacteria	Aureimonas
	263	Actinobacteria	Geodermatophilus
	272	Actinobacteria	Saccharopolyspora
	310	Actinobacteria	Clavibacter
	445	Firmicutes	Caryophanon
	454	Bacteroidetes	Spirosoma
	475	Proteobacteria	Pseudorhodoferax
	482	Actinobacteria	Actinopolysporaceae_unclassified
	763	Deinococcus-Thermus	Deinococcus
	806	Actinobacteria	Quadrisphaera
	824	Bacteroidetes	Fibrella
	847	Actinobacteria	Williamsia
	941	Proteobacteria	Acidovorax
	981	Proteobacteria	Aurantimonadaceae_unclassified
	1037	Firmicutes	Saccharibacillus
	1081	Actinobacteria	Patulibacter
	1221	Firmicutes	Planomicrobium
	1336	Proteobacteria	Ketogulonicigenium
	1474	Proteobacteria	Pseudoalteromonas
	1480	Actinobacteria	Prauserella
	1500	Actinobacteria	Nakamurella

1553	Actinobacteria	Pseudokineococcus
1613	Firmicutes	Exiguobacterium
1774	Actinobacteria	Marmoricola
1921	Bacteroidetes	Siphonobacter
1995	Actinobacteria	Actinomycetospora
2063	Proteobacteria	Agaricicola
2113	Actinobacteria	Kineosporia
2224	Actinobacteria	Agromyces
2235	Firmicutes	Anaerostipes
2246	Proteobacteria	Caulobacter
2260	Thaumarchaeota	Nitrososphaera_unclassified
2261	Proteobacteria	Acidisoma
2452	Proteobacteria	Rickettsia
2459	Bacteroidetes	Terrimonas
2612	Actinobacteria	Terrabacter
2637	Proteobacteria	Burkholderia
2701	Proteobacteria	Bradyrhizobium
2734	Proteobacteria	Rhizorhabdus
2869	Actinobacteria	Blastococcus
2915	Proteobacteria	Skermanella
3055	Proteobacteria	Aquabacterium
3176	Armatimonadetes	Armatimonadetes_gp1
3384	Proteobacteria	Methylophilus
3446	Proteobacteria	Candidatus_Procabacter
3557	Proteobacteria	Kaistia
3699	Armatimonadetes	Armatimonadetes_unclassified
3881	Proteobacteria	Chiayiivirga
4026	Proteobacteria	Rhodopseudomonas
4097	Acidobacteria	Terriglobus_unclassified
4357	Proteobacteria	Cystobacteraceae_unclassified
4427	Actinobacteria	Gaiella
4548	Bacteroidetes	Flavisolibacter
4625	Proteobacteria	Orientia
4773	Actinobacteria	Actinoplanes
4789	Proteobacteria	Reyranella_unclassified
4899	Proteobacteria	Rickettsiaceae_unclassified
4916	Actinobacteria	Phycococcus
4965	Bacteroidetes	Chitinophaga
5206	Proteobacteria	Aminobacter
5248	Bacteroidetes	Ferruginibacter
5345	Actinobacteria	Blastocatella_unclassified
5372	Proteobacteria	Alkanindiges
5461	Actinobacteria	Agrococcus
5535	Bacteroidetes	Rubrivirga
5557	Proteobacteria	Belnapia
5666	Proteobacteria	Alsobacter
5788	Proteobacteria	Noviherbaspirillum
5890	candidate_division_W	Candidate_division_WPS-1_unclassified
	PS-1	

6382	Armatimonadetes	Armatimonadetes_gp5_unclassified
6432	Actinobacteria	Dactylosporangium
6522	Actinobacteria	Oryzihumus
6649	Bacteroidetes	Parasegetibacter
6986	Firmicutes	Tumebacillus
7144	Chlamydiae	Parachlamydiaceae_unclassified
7370	Acidobacteria	Gp7_unclassified
7793	Proteobacteria	Labilithrix
8012	Proteobacteria	Myxococcaceae_unclassified
8318	Bacteroidetes	Larkinella
8324	Acidobacteria	Gp3_unclassified
8534	Proteobacteria	Xanthobacteraceae_unclassified
8768	Acidobacteria	Gp4_unclassified
9130	Bacteroidetes	Segetibacter
9415	Actinobacteria	Modestobacter
9421	Proteobacteria	Beijerinckia
10340	Planctomycetes	Singulisphaera
10360	Proteobacteria	Methylobacteriaceae_unclassified
10668	Bacteroidetes	Adhaeribacter
10960	Armatimonadetes	Chthonomonas/Armatimonadetes_gp3
10968	Actinobacteria	Jatrophihabitans
11344	Bacteroidetes	Sediminibacterium
12210	Chloroflexi	Herpetosiphon
13548	Actinobacteria	Kineosporiaceae_unclassified
14239	Proteobacteria	Rubellimicrobium
14634	Planctomycetes	Zavarzinella
15290	Acidobacteria	Gp1_unclassified
16489	Acidobacteria	Acidobacteria_Gp3_unclassified
19300	Chloroflexi	Ktedonobacter
19735	Planctomycetes	Gemmata

Table S4. List of unique genera in used RMS bedding or in used straw.

RMS	# OTU	Phylum	Genus
	80	Proteobacteria	Salmonella
	169	Actinobacteria	Thermobispora
	194	Proteobacteria	Chelativorans
	197	Firmicutes	Thermobacillus
	236	Cloacimonetes	Candidatus_Cloacamonas_unclassified
	309	Proteobacteria	Schlegelella
	356	Actinobacteria	Thermopolyspora
	363	Proteobacteria	Sandarakinorhabdus
	425	Proteobacteria	Chelatococcus
	437	Proteobacteria	Methylobacillus
	444	Firmicutes	Halocella
	551	Chloroflexi	Sphaerobacter
	591	Firmicutes	Rummeliibacillus
	630	Firmicutes	Ammoniibacillus
	663	Firmicutes	Sinibacillus
	708	Firmicutes	Paenisporosarcina
	755	Actinobacteria	Actinotalea
	825	Actinobacteria	Nonomuraea
	977	Actinobacteria	Leifsonia
	1043	Actinobacteria	Thermomonosporaceae_unclassified
	1045	Proteobacteria	Nannocystis
	1055	Fibrobacteres	Fibrobacteres_unclassified
	1082	Firmicutes	Saccharococcus
	1112	Proteobacteria	Vulgatibacter
	1229	Firmicutes	Geobacillus
	1266	Chloroflexi	Litorilinea
	1541	Firmicutes	Brevibacillus
	1590	Proteobacteria	Methylomicrobium
	1622	Bacteroidetes	Muricauda
	1638	Proteobacteria	Ferrovibrio
	1735	Proteobacteria	Sandaracinus
	1761	Chloroflexi	Chloroflexales_unclassified
	1815	Firmicutes	Defluviitalea
	1824	Firmicutes	Mobilitalea
	1852	Bacteroidetes	Mariniphaga
	1886	Actinobacteria	Cellulosimicrobium
	1902	Proteobacteria	Sinobacteraceae_unclassified
	1963	Firmicutes	Tepidanaerobacter
	1971	Firmicutes	Proteiniborus
	2194	Proteobacteria	Parvibaculum
	2263	Proteobacteria	Herminiimonas
	2304	BCR1	BRC1_unclassified
	2401	Actinobacteria	Aciditerrimonas
	2419	Acidobacteria	Acidobacteria_unclassified
	2483	Proteobacteria	Chondromyces
	2488	Chloroflexi	Oscillochloris

2549	Proteobacteria	Oceanibaculum
2594	Proteobacteria	Marinobacterium
2727	Firmicutes	Paenivacillaceae_2_unclassified
2751	Euryarchaeota	Methanobacterium
2803	Firmicutes	Parasporobacterium
2946	Proteobacteria	Serpens
2969	Bacteroidetes	Flammeovirgaceae_unclassified
3053	Proteobacteria	Thiopfundum
3067	Bacteroidetes	Rhodothermaceae_unclassified
3096	Proteobacteria	Burkholderiaceae_unclassified
3249	Proteobacteria	Rhodoligotrophos
3471	Firmicutes	Thermaerobacter
3506	Firmicutes	Caldicoprobacter
3584	Proteobacteria	Thioalkalspiraceae_unclassified
3594	Proteobacteria	Methylophilaceae_unclassified
3608	Bacteroidetes	Vitellibacter
3800	Proteobacteria	Zobellella
3821	Proteobacteria	Gammaproteobacteria_incertae_sedis_unclassified
3951	Synergistetes	Aminivibrio
4345	Firmicutes	Pelotomaculum
4359	Proteobacteria	Sneathiella
4421	Bacteroidetes	Winogradskyella
4728	Proteobacteria	Candidimonas
4789	Proteobacteria	Reyranella_unclassified
4856	Actinobacteria	Thermocrispum
4915	Bacteroidetes	Chryseolinea_unclassified
5069	Firmicutes	Ammoniphilus
5194	Actinobacteria	Myceligenans
5303	Bacteroidetes	Sporocytophaga
5629	Proteobacteria	Pseudochelatococcus
5651	Firmicutes	Caldkalibacillus
5871	Actinobacteria	Jiangella
5977	Firmicutes	Desulfotomaculum
6012	Proteobacteria	Pelistega
6047	Actinobacteria	Actinomadura
6683	Verrucomicrobia	Opititae_unclassified
6771	Bacteroidetes	Echinicola
7035	Proteobacteria	Chromatiales_unclassified
7158	Chloroflexi	Ornatilinea
7392	Proteobacteria	Methylobacter
7395	Proteobacteria	Dokdonella
7743	Firmicutes	Aeribacillus
7849	Proteobacteria	Aquicella
7952	Actinobacteria	Iamia
7959	Proteobacteria	Rhodoplanes
7961	Firmicutes	Cohnella
8375	Proteobacteria	Solimonas
8452	Euryarchaeota	Methanoculleus
8835	Proteobacteria	Bauldia

	8854	Proteobacteria	Methylococcaceae_unclassified
	8975	Proteobacteria	Nitrosospira
	9302	Bacteroidetes	Bizionia
	9887	Proteobacteria	Pseudolabrys
	12615	Planctomycetes	Phycisphaera
	12715	Planctomycetes	Planctomycetes_unclassified
	13398	Proteobacteria	Azospirillum
	13682	Proteobacteria	Halica
	14256	Proteobacteria	Fontimonas
	14680	Proteobacteria	Simplicispira
	16517	Actinobacteria	Verrucosispora
	18053	Firmicutes	Anaerosporebacter
	18428	Actinobacteria	Demequinaceae_unclassified
	21631	Proteobacteria	Croceicoccus
	23969	Actinobacteria	Dermabacteraceae_unclassified
	28643	Proteobacteria	Xanthomonadales_unclassified
	30575	Chlamydiae	Chlamydiales_unclassified
	34586	Bacteroidetes	Salinirepens
Straw	36	Proteobacteria	Citrobacter
	144	Proteobacteria	Duganella
	168	Actinobacteria	Rathayibacter
	170	Actinobacteria	Kineococcus
	232	Actinobacteria	Curtobacterium
	250	Proteobacteria	Aureimonas
	263	Actinobacteria	Geodermatophilus
	272	Actinobacteria	Saccharopolyspora
	310	Actinobacteria	Clavibacter
	445	Firmicutes	Caryophanon
	475	Proteobacteria	Pseudorhodoferax
	482	Actinobacteria	Actinopolysporaceae_unclassified
	616	Proteobacteria	Variovorax
		Deinococcus-	
	763	Thermus	Deinococcus
	806	Actinobacteria	Quadrisphaera
	824	Bacteroidetes	Fibrella
	847	Actinobacteria	Williamsia
	941	Proteobacteria	Acidovorax
	973	Firmicutes	Megasphaera
	981	Proteobacteria	Aurantimonadaceae_unclassified
	1037	Firmicutes	Saccharibacillus
	1336	Proteobacteria	Ketogulonicigenium
	1480	Actinobacteria	Prauserella
	1505	Proteobacteria	Aeromonas
	1553	Actinobacteria	Pseudokineococcus
	1613	Firmicutes	Exiguobacterium
	1791	Firmicutes	Trichococcus
	1867	Proteobacteria	Nitrincola
	1921	Bacteroidetes	Siphonobacter
	1995	Actinobacteria	Actinomycetospira

2000	Firmicutes	Vagococcus
2063	Proteobacteria	Agaricicola
2113	Actinobacteria	Kineosporia
2224	Actinobacteria	Agromyces
2261	Proteobacteria	Acidisoma
2282	Firmicutes	Tetragenococcus
2421	Proteobacteria	Lampropedia
2452	Proteobacteria	Rickettsia
2612	Actinobacteria	Terrabacter
2623	Firmicutes	Dialister
2624	Firmicutes	Leuconostoc
2631	Proteobacteria	Uruburuella
2637	Proteobacteria	Burkholderia
2734	Proteobacteria	Rhizorhabdus
2869	Actinobacteria	Blastococcus
2915	Proteobacteria	Skermanella
2994	Proteobacteria	Sutterella
3055	Proteobacteria	Aquabacterium
3151	Proteobacteria	Aeromonadaceae_unclassified
3176	Armatimonadetes	Armatimonas/Armatimonadetes_gp1
3384	Proteobacteria	Methylophilus
3446	Proteobacteria	Candidatus_Probacter
3476	Bacteroidetes	Macellibacteroides
3699	Armatimonadetes	Armatimonadetes_unclassified
3881	Proteobacteria	Chiayiivirga
3918	Firmicutes	Sharpea
4026	Proteobacteria	Rhodopseudomonas
4088	Bacteroidetes	Arcticibacter
4097	Acidobacteria	Terriglobus_unclassified
4136	Firmicutes	Acetitomaculum
4142	Firmicutes	Faecalibacterium
4294	Firmicutes	Eremococcus
4315	Proteobacteria	Herbaspirillum
4357	Proteobacteria	Cystobacteraceae_unclassified
4377	Firmicutes	Nosocomiicoccus
4427	Actinobacteria	Gaiella
4474	Proteobacteria	Pseudorhodobacter
4529	Bacteroidetes	Cytophaga
4548	Bacteroidetes	Flavisolibacter
4639	Firmicutes	Ezakiella
4649	Actinobacteria	Dermathophilaceae_unclassified
4721	Firmicutes	Acidaminococcus
4737	Proteobacteria	Hyphomonas
4773	Actinobacteria	Actinoplanes
4786	Proteobacteria	Providencia
4899	Proteobacteria	Rickettsiaceae_unclassified
4916	Actinobacteria	Phycococcus
4943	Actinobacteria	Atopobium
5049	Actinobacteria	Herbiconiux

5198	Actinobacteria	Alloscardovia
5206	Proteobacteria	Aminobacter
5345	Acidobacteria	Blastocatella_unclassified
5372	Proteobacteria	Alkanindiges
5557	Proteobacteria	Belnapia
5558	Actinobacteria	Denitrobacterium
5593	Proteobacteria	Azonexus
5702	Elusimicrobia	Elusimicrobium
6287	Firmicutes	Howardella
6382	Armatimonadetes	Armatimonadetes_gp5_unclassified
6469	Proteobacteria	Marinomonas
6480	Actinobacteria	Haloactinobacterium
6528	Bacteroidetes	Barnesiella
6564	Proteobacteria	Moracella
6635	Firmicutes	Anaerofustis
6876	Firmicutes	Butyrivibrio
7086	Euryarchaeota	Methanimicrococcus
7156	Actinobacteria	Geodermatophilaceae_unclassified
7239	Proteobacteria	Pasteurella_unclassified
7370	Acidobacteria	Gp7_unclassified
7397	Proteobacteria	Kingella
7633	Firmicutes	Acetivibrio
7793	Proteobacteria	Labilithrix
7829	Tenericutes	Anaeroplasma
7947	Firmicutes	Eubacterium
8212	Firmicutes	Anaerofilum
8422	Firmicutes	Hydrogenoanaerobacterium
8534	Proteobacteria	Xanthobacteraceae_unclassified
8582	Euryarchaeota	Methanosarcinaceae_unclassified
8739	Bacteroidetes	Mucinivorans
8748	Firmicutes	Hespellia
8768	Acidobacteria	Gp4_unclassified
8965	Firmicutes	Peptococcus
9029	Proteobacteria	Aestuariispira
9130	Bacteroidetes	Segetibacter
9214	Actinobacteria	Slackia
9235	Actinobacteria	Kribella
9415	Actinobacteria	Modestobacter
9563	Lentisphaerae	Oligosphaera
10137	Proteobacteria	Phyllobacterium
10288	Actinobacteria	Rarobacter
10322	Firmicutes	Anaerotruncus
10360	Proteobacteria	Methylobacteriaceae_unclassified
10668	Bacteroidetes	Adhaeribacter
10838	Actinobacteria	Enterorhabdus
10959	Proteobacteria	Halomonadaceae_unclassified
10960	Armatimonadetes	Chthonomonas/Armatimonadetes_gp3
10986	Firmicutes	Clostridiales_Incertae_Sedis_XII_unclassified
10996	Proteobacteria	Neisseria

11511	Proteobacteria	Dechloromonas
11816	Firmicutes	Acetanaerobacterium
11847	Lentisphaerae	Lentisphaerae_unclassified
14634	Planctomycetes	Zavarzinella
14894	Actinobacteria	Nitriliruptor
15081	Firmicutes	Marinilactibacillus
17577	Bacteroidetes	Coprobacter
20105	Actinobacteria	Streptomycetaceae_unclassified

Table S5. List of unique genera in unused or in used straw.

Unused	# OTU	Phylum	Genus
	194	Proteobacteria	Chelativorans
	197	Firmicutes	Thermobacillus
	591	Firmicutes	Rummeliibacillus
	2401	Actinobacteria	Aciditerrimonas
	4625	Proteobacteria	Orientia
	4789	Proteobacteria	Reyranella_unclassified
	4915	Bacteroidetes	Chryseolinea_unclassified
	5535	Bacteroidetes	Rubrivirga
	5666	Proteobacteria	Alsobacter
	5788	Proteobacteria	Noviherbaspirillum
	6432	Actinobacteria	Dactylosporangium
	6522	Actinobacteria	Oryzihumus
	6649	Bacteroidetes	Parasegetibacter
	8012	Proteobacteria	Myxococcaceae_unclassified
	8318	Bacteroidetes	Larkinella
	9421	Proteobacteria	Beijerinckia
	10968	Actinobacteria	Jatrophihabitans
	11344	Bacteroidetes	Sediminibacterium
	12210	Chloroflexi	Herpetosiphon
	13548	Actinobacteria	Kineosporiaceae_unclassified
	14239	Proteobacteria	Rubellimicrobium
	15290	Acidobacteria	Gp1_unclassified
	16489	Acidobacteria	Acidobacteria_Gp3_unclassified
	19300	Chloroflexi	Ktedonobacter
	19735	Planctomycetes	Gemmata
Used	70	Proteobacteria	Escherichia/Shigella
	244	Proteobacteria	Idiomarina
	301	Proteobacteria	Rheinheimera
	382	Verrucomicrobia	Verrucomicrobiales_unclassified
	422	Proteobacteria	Alteromonadales_incertae_sedi_unclassified
	555	Actinobacteria	Cellulomonas
	607	Actinobacteria	Jonesia
	616	Proteobacteria	Variovorax
	634	Proteobacteria	Yersinia
	636	Proteobacteria	Neisseriaceae_unclassified
	637	Firmicutes	Tepidimicrobium
	641	Proteobacteria	Alishewanella
	695	Proteobacteria	Ignatzschineria
	715	Planctomycetes	Rhodopirellula
	722	Proteobacteria	Sphingorhabdus
	727	Planctomycetes	Planctomicrobium
	731	Firmicutes	Clostridium_III
	738	Proteobacteria	Marinobacter
	792	Firmicutes	Chryseomicrobium
	815	Actinobacteria	Piscicoccus
	877	Firmicutes	Ornithinibacillus

950	Proteobacteria	Bradymonas
966	Bacteroidetes	Cryomorpha
973	Firmicutes	Megasphaera
994	Actinobacteria	Demequina
1004	Proteobacteria	Nannocystaceae_unclassified
1015	Actinobacteria	Gulosibacter
1020	Actinobacteria	Gordonia
1024	Bacteroidetes	Brumimicrobium
1095	Proteobacteria	Bordetella
1127	Proteobacteria	Moraxellaceae_unclassified
1174	Firmicutes	Peptostreptococcus
1208	Verrucomicrobia	Puniceicoccaceae_unclassified
1219	Proteobacteria	Acetobacter
1235	Bacteroidetes	Proteiniphilum
1259	Firmicutes	Sedimentibacter
1281	Actinobacteria	Ornithinococcus
1311	Bacteroidetes	Flavobacteriales_unclassified
1358	Actinobacteria	Georgenia
1390	Firmicutes	Acidaminococcaceae_unclassified
1397	Actinobacteria	Glycomyces
1401	Proteobacteria	Oceanospirillaceae_unclassified
1427	Proteobacteria	Lysobacter
1432	Actinobacteria	Corynebacteriaceae_unclassified
1435	Proteobacteria	Pseudohongiella
1505	Proteobacteria	Aeromonas
1538	Proteobacteria	Maricurvus
1561	Firmicutes	Holdemania
1576	Proteobacteria	Steroidobacter
1615	Fusobacteria	Fusobacterium
1623	Proteobacteria	Vibrio
1637	Proteobacteria	Proteus
1682	Firmicutes	Fastidiosipila
1686	Proteobacteria	Thauera
1688	Proteobacteria	Campylobacter
1729	Proteobacteria	Castellaniella
1754	Proteobacteria	Alteromonadaceae_unclassified
1756	Actinobacteria	Actinomyces
1791	Firmicutes	Trichococcus
1851	Proteobacteria	Alcaligenes
1867	Proteobacteria	Nitrincola
1907	SR1	SR1_unclassified
1924	Bacteroidetes	Bergeyella
2000	Firmicutes	Vagococcus
2010	Firmicutes	Macroccoccus
2039	Synergistetes	Synergistaceae_unclassified
2159	Firmicutes	Ercella
2161	Fibrobacteres	Fibrobacter
2173	Bacteroidetes	Dysgonomonas
2205	Firmicutes	Gallicola

2207	Bacteroidetes	Gelidibacter
2282	Firmicutes	Tetragenococcus
2305	Planctomycetes	Blastopirellula
2310	Proteobacteria	Constrictibacter
2325	Euryarchaeota	Methanosarcina
2403	Firmicutes	Halolactibacillus
2417	Actinobacteria	Actinomycetaceae_unclassified
2421	Proteobacteria	Lampropedia
2463	Proteobacteria	Kerstersia
2534	Firmicutes	Lactobacillaceae_unclassified
2547	Actinobacteria	Bifidobacteriaceae_unclassified
2557	Firmicutes	Helcococcus
2584	Firmicutes	Peptoniphilaceae_unclassified
2608	Euryarchaeota	Methanocorpusculum
2623	Firmicutes	Dialister
2631	Proteobacteria	Uruburuella
2633	Bacteroidetes	Odoribacter
2706	Firmicutes	Saccharofermentans
2759	Firmicutes	Thermoactinomycetaceae_1_unclassified
2775	Proteobacteria	Oceanospirillales_unclassified
2797	Proteobacteria	Rhodobacter
2802	Actinobacteria	Stackebrandtia
2825	Firmicutes	Acetoanaerobium
2958	Proteobacteria	Desulfovibrio
2983	Actinobacteria	Bogoriellaceae_unclassified
2994	Proteobacteria	Sutterella
2996	Bacteroidetes	Arenibacter
3035	Firmicutes	Guggenheimella
3048	Bacteroidetes	Galbibacter
3081	Proteobacteria	Nitratireductor
3090	Firmicutes	Peptoniphilus
3118	Proteobacteria	Nitrosomonas
3151	Proteobacteria	Aeromonadaceae_unclassified
3241	Proteobacteria	Vitreoscilla
3262	Proteobacteria	Asticcacaulis
3319	Proteobacteria	Sandaracinobacter
3350	Bacteroidetes	Anaerocella
3476	Bacteroidetes	Macellibacteroides
3478	Proteobacteria	Halobacteriovorax
3487	Firmicutes	Butyricicoccus
3497	Bacteroidetes	Mariniflexile
3503	Firmicutes	Eubacteriaceae-Unclassified
3516	Actinobacteria	Arcanobacterium
3528	Firmicutes	Selenomonas
3676	Proteobacteria	Morganella
3905	Firmicutes	Alkalibaculum
3918	Firmicutes	Sharpea
3938	Proteobacteria	Brucellaceae_unclassified
4088	Bacteroidetes	Arcticibacter

4095	Proteobacteria	Shewanella
4109	Firmicutes	Proteocatella
4131	Bacteroidetes	Prolixibacteraceae_unclassified
4136	Firmicutes	Acetitomaculum
4287	Proteobacteria	Paenochrobactrum
4294	Firmicutes	Eremococcus
4315	Proteobacteria	Herbaspirillum
4322	Actinobacteria	Parvibacter
4375	Actinobacteria	Tetrasphaera
4377	Firmicutes	Nosocomiicoccus
4409	Firmicutes	Fusibacter
4416	Bacteroidetes	Rikenellaceae_unclassified
4474	Proteobacteria	Pseudorhodobacter
4489	Proteobacteria	Desulfomicrobium
4529	Bacteroidetes	Cytophaga
4638	Proteobacteria	Thiopseudomonas
4639	Firmicutes	Ezakiella
4645	Proteobacteria	Pseudochrobactrum
4649	Actinobacteria	Dermatophilaceae_unclassified
4721	Firmicutes	Acidaminococcus
4737	Proteobacteria	Hyphomonas
4786	Proteobacteria	Providencia
4943	Actinobacteria	Atopobium
5049	Actinobacteria	Herbiconiux
5198	Actinobacteria	Alloscardovia
5213	Firmicutes	Acetobacterium
5302	Firmicutes	Syntrophococcus
5408	Firmicutes	Succiniclasticum
5438	Firmicutes	Kandleria
5558	Actinobacteria	Denitrobacterium
5571	Firmicutes	Alkaliphilus
5593	Proteobacteria	Azonexus
5702	Elusimicrobia	Elusimicrobium
5705	Verrucomicrobia	Cerasicoccus
5770	Bacteroidetes	Balneola
6006	Proteobacteria	Desulfobulbus
6110	Proteobacteria	Bacteriovoracaceae_unclassified
6122	Firmicutes	Pseudobutyrvibrio
6240	Actinobacteria	Ilumatobacter
6287	Firmicutes	Howardella
6373	Firmicutes	Succinispira
6469	Proteobacteria	Marinomonas
6474	Actinobacteria	Propionibacteriaceae_unclassified
6480	Actinobacteria	Haloactinobacterium
6524	Chloroflexi	Thermomicrobia_unclassified
6528	Bacteroidetes	Barnesiella
6564	Proteobacteria	Moraxella
6635	Firmicutes	Anaerofustis
6730	Proteobacteria	Vasilyevaea

6876	Firmicutes	Butyrivibrio
6901	Chloroflexi	Caldilineaceae_unclassified
7086	Euryarchaeota	Methanimicrococcus
7156	Actinobacteria	Geodermatophilaceae_unclassified
7239	Proteobacteria	Pasteurellaceae_unclassified
7397	Proteobacteria	Kingella
7633	Firmicutes	Acetivibrio
7829	Tenericutes	Anaeroplasma
7947	Firmicutes	Eubacterium
8212	Firmicutes	Anaerofilum
8235	Verrucomicrobia	Opitutaceae_unclassified
8281	Euryarchaeota	Methanomassiliicoccus
8422	Firmicutes	Hydrogenoanaerobacterium
8582	Euryarchaeota	Methanosarcinaceae_unclassified
8739	Bacteroidetes	Mucinivorans
8748	Firmicutes	Hespellia
8965	Firmicutes	Peptococcus
9029	Proteobacteria	Aestuariispira
9214	Actinobacteria	Slackia
9235	Actinobacteria	Kribbella
9326	Firmicutes	Alkalibacter
9563	Lentisphaerae	Oligosphaera
9772	Actinobacteria	Tessaracoccus
10137	Proteobacteria	Phyllobacterium
10288	Actinobacteria	Rarobacter
10322	Firmicutes	Anaerotruncus
10716	Planctomycetes	Rubinisphaera
10838	Actinobacteria	Enterorhabdus
10959	Proteobacteria	Halomonadaceae_unclassified
10986	Firmicutes	Clostridiales_Incertae_Sedis_XII_unclassified
10996	Proteobacteria	Neisseria
11078	Parcubacteria	Parcubacteria_unclassified
11511	Proteobacteria	Dechloromonas
11816	Firmicutes	Acetanaerobacterium
11847	Lentisphaerae	Lentisphaerae_unclassified
14894	Actinobacteria	Nitriliruptor
15081	Firmicutes	Marinilactibacillus
16508	Chloroflexi	Nitrolavea
17577	Bacteroidetes	Coprobacter
19616	Actinobacteria	Promicromonosporaceae_unclassified
20105	Actinobacteria	Streptomycetaceae_unclassified

Table S6. List of unique genera in unused or in used RMS.

Unused	# OTU	Phylum	Genus
	36	Proteobacteria	Citrobacter
	144	Proteobacteria	Duganella
	973	Firmicutes	Megasphaera
	1477	Actinobacteria	Thermomonospora
	1609	Actinobacteria	Thermasporomyces
	1791	Firmicutes	Trichococcus
	1972	Proteobacteria	Sorangium
	2624	Firmicutes	Leuconostoc
	2994	Proteobacteria	Sutterella
	3476	Bacteroidetes	Macellibacteroides
	3597	Proteobacteria	Desulfovibrionaceae_unclassified
	3778	Proteobacteria	Marinicella_unclassified
	3918	Firmicutes	Sharpea
	4142	Firmicutes	Faecalibacterium
	4277	Bacteroidetes	Geofilum
	4721	Firmicutes	Acidaminococcus
	4943	Actinobacteria	Atopobium
	5061	Firmicutes	Caldanaerovirga
	5558	Actinobacteria	Denitrobacterium
	5583	Firmicutes	Allisonella
	6352	Spirochaetes	Spirochaetaceae_unclassified
	6836	Actinobacteria	Asaccharobacter
	6876	Firmicutes	Butyrivibrio
	6889	Firmicutes	Schwartzia
	7938	Firmicutes	Anaerosphaera
	7947	Firmicutes	Eubacterium
	8212	Firmicutes	Anaerofilum
	8748	Firmicutes	Hespellia
	8858	Firmicutes	Clostridiales_Incertae_Sedis_III_unclassified
	8965	Firmicutes	Peptococcus
	12152	Spirochaetes	Sphaerochaeta
	13187	Firmicutes	Desulfonispota
	29926	Proteobacteria	Pseudomonadales_unclassified
	36110	Firmicutes	Tepidibacillus
Used	65	Proteobacteria	Polaromonas
	80	Proteobacteria	Salmonella
	236	Cloacimonetes	Candidatus_Cloacamonas_unclassified
	454	Bacteroidetes	Spirosoma
	641	Proteobacteria	Alishewanella
	792	Firmicutes	Chryseomicrobium
	1081	Actinobacteria	Patulibacter
	1219	Proteobacteria	Acetobacter
	1221	Firmicutes	Planomicrobium
	1474	Proteobacteria	Pseudoalteromonas
	1500	Actinobacteria	Nakamurella
	1590	Proteobacteria	Methylobacterium

1774	Actinobacteria	Marmoricola
2010	Firmicutes	Maccrococcus
2235	Firmicutes	Anaerostipes
2246	Proteobacteria	Caulobacter
2260	Thaumarchaeota	Nitrososphaera_unclassified
2417	Actinobacteria	Actinomycetaceae_unclassified
2419	Acidobacteria	Acidobacteria_unclassified
2459	Bacteroidetes	Terrimonas
2584	Firmicutes	Peptoniphilaceae_unclassified
2701	Proteobacteria	Bradyrhizobium
2797	Proteobacteria	Rhodobacter
3053	Proteobacteria	Thiopfundum
3081	Proteobacteria	Nitratreductor
3241	Proteobacteria	Vitreoscilla
3516	Actinobacteria	Arcanobacterium
3557	Proteobacteria	Kaistia
3584	Proteobacteria	Thioalkalispiraceae_unclassified
3594	Proteobacteria	Methylophilaceae_unclassified
4345	Firmicutes	Pelotomaculum
4409	Firmicutes	Fusibacter
4489	Proteobacteria	Desulfomicrobium
4789	Proteobacteria	Reyranella_unclassified
4965	Bacteroidetes	Chitinophaga
5194	Actinobacteria	Myceligenans
5213	Firmicutes	Acetobacterium
5248	Bacteroidetes	Ferruginibacter
5461	Actinobacteria	Agrococcus
5770	Bacteroidetes	Balneola
5871	Actinobacteria	Jiangella
5890	candidate_division_WPS-1	Candidate_division_WPS-1_unclassified
6006	Proteobacteria	Desulfobulbus
6047	Actinobacteria	Actinomadura
6373	Firmicutes	Succinispira
6730	Proteobacteria	Vasilyevaea
6771	Bacteroidetes	Echinicola
6986	Firmicutes	Tumebacillus
7144	Chlamydiae	Parachlamydiaceae_unclassified
7158	Chloroflexi	Ornatilinea
7392	Proteobacteria	Methylobacter
7395	Proteobacteria	Dokdonella
7849	Proteobacteria	Aquicella
7959	Proteobacteria	Rhodoplanes
8235	Verrucomicrobia	Opitutaceae_unclassified
8324	Acidobacteria	Gp3_unclassified
8375	Proteobacteria	Solimonas
8835	Proteobacteria	Bauldia
8854	Proteobacteria	Methylococcaceae_unclassified
8975	Proteobacteria	Nitrosospira

9302	Bacteroidetes	Bizionia
9326	Firmicutes	Alkalibacter
9887	Proteobacteria	Pseudolabrys
10340	Planctomycetes	Singulisphaera
10716	Planctomycetes	Rubinisphaera
11078	Parcubacteria	Parcubacteria_unclassified
12615	Planctomycetes	Phycisphaera
12715	Planctomycetes	Planctomycetes_unclassified
13398	Proteobacteria	Azospirillum
13682	Proteobacteria	Haliea
14256	Proteobacteria	Fontimonas
14680	Proteobacteria	Simplicispira
16508	Chloroflexi	Nitrolancea
16517	Actinobacteria	Verrucosispora
18053	Firmicutes	Anaerosporobacter
18428	Actinobacteria	Demequinaceae_unclassified
19616	Actinobacteria	Promicromonosporaceae_unclassified
21631	Proteobacteria	Croceicoccus
23969	Actinobacteria	Dermabacteraceae_unclassified
30575	Chlamydiae	Chlamydiales_unclassified
34586	Bacteroidetes	Salinirepens

Table S7. List of unique genera in separation followed with maturation in a heap (S-MH) or in separation with maturation in an opened or enclosed container (S-MB) production.

S-MH	OTU	Phylum	Genus
	114	Proteobacteria	Roseomonas
	1 024	Bacteroidetes	Brumimicrobium
	1 229	Firmicutes	Geobacillus
	1 266	Chloroflexi	Litorilinea
	1 327	Bacteroidetes	Parabacteroides
	1 401	Proteobacteria	Oceanospirillaceae unclassified
	1 605	Bacteroidetes	Cytophagaceae unclassified
	1 634	Verrucomicrobia	Opitutus
	1 729	Proteobacteria	Castellaniella
	1 754	Proteobacteria	Alteromonadaceae unclassified
	1 953	Proteobacteria	Legionella
	2 305	Plancotomycetes	Blastopirellula
	2 769	Proteobacteria	Acetobacteraceae unclassified
	3 172	Proteobacteria	Oceanisphaera
	3 249	Proteobacteria	Rhodoligotrophos
S-MB	10	Proteobacteria	Neorhizobium
	845	Actinobacteria	Promicromonospora
	1 068	Chloroflexi	Anaerolineaceae unclassified
	4 473	Firmicutes	Peptostreptococcaceae unclassified

Table S8. Unconditional least square means estimated bacterial counts for different groups of bacteria, in freestall and tiestall farms.

Bacterial group	Status	Freestall		Tiestall	
		Log CFU/g [*]	95% CI	Log CFU/g [*]	95% CI
Total mesophilic flora	Unused	8.1 ^a	7.7, 8.4	7.1 ^b	6.9, 7.3
	Used	9.4 ^c	9.1, 9.8	8.7 ^d	8.5, 8.9
Staphylococci	Unused	5.1 ^a	4.7, 5.6	3.3 ^b	6.0, 3.5
	Used	6.7 ^c	6.3, 7.2	7.0 ^c	6.8, 7.3
Streptococci	Unused	5.1 ^a	4.5, 5.7	3.5 ^b	3.2, 3.8
	Used	6.3 ^c	5.7, 6.9	7.2 ^c	6.8, 7.5
<i>E. coli</i>	Unused	4.5 ^a	4.2, 4.9	2.4 ^b	2.2, 2.6
	Used	5.4 ^c	5.1, 5.8	4.5 ^a	4.3, 4.7
<i>Klebsiella</i> spp.	Unused	4.0 ^a	3.6, 4.5	4.9 ^b	4.7, 5.2
	Used	5.4 ^{b, c}	4.9, 5.8	5.6 ^c	5.3, 5.8

^{*} Least square mean estimate

^{a, b, c, d} For a given bacterial group, estimates within a row or column with different superscripts were considered to be statistically different (P -value < 0.05) after adjusting for multiple comparison using the Tukey-Kramer adjustment.

Table S9. Unconditional least square means estimated bacterial counts for different groups of bacteria, in farms using straw vs. recycled manure solids (RMS) bedding.

Bacterial group	Status	RMS		Straw	
		Log CFU/g*	95% CI	Log CFU/g*	95% CI
Total mesophilic flora	Unused	8.0 ^a	7.7, 8.3	7.0 ^b	6.8, 7.2
	Used	9.5 ^c	9.2, 9.8	8.6 ^d	8.4, 8.8
Staphylococci	Unused	5.3 ^a	5.0, 5.7	3.0 ^b	2.8, 3.2
	Used	6.9 ^c	6.6, 7.3	7.0 ^c	6.7, 7.2
Streptococci	Unused	5.1 ^a	4.6, 5.6	3.3 ^b	3.0, 3.7
	Used	6.3 ^c	5.8, 6.8	7.3 ^d	6.9, 7.6
<i>E. coli</i>	Unused	4.5 ^a	4.2, 4.8	2.2 ^b	2.0, 2.4
	Used	5.4 ^c	5.1, 5.7	4.5 ^a	4.3, 4.6
<i>Klebsiella</i> spp.	Unused	3.8 ^a	3.4, 4.2	5.2 ^b	4.9, 5.4
	Used	5.3 ^{b, c}	4.9, 5.7	5.6 ^c	5.4, 5.9

* Least square mean estimate

^{a, b, c, d} For a given bacterial group, estimates within a row or column with different superscripts were considered to be statistically different (P -value < 0.05) after adjusting for multiple comparison using the Tukey-Kramer adjustment.