

Supplementary Table S1. Diversity of aerobic spore-forming bacteria present in raw milk obtained from four farms over two seasons

Farm, Seasons	Number of isolates	Closest related described species	Maximum Identity (%)#	GenBank Accession Number
Farm 1, Summer	19	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	6	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	1	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	1	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	2	<i>B. pumilus</i> (T); ATCC 7061	99.6	AY876289
	1	<i>Paenibacillus marinisediminis</i> (T); LHW	97	JF748731
Farm 1, Winter	14	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	4	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	2	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	2	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	2	<i>Paenibacillus xylanexedens</i> (T); B22a	98.5	EU558281
	1	<i>B. clausii</i> (T); DSM 8716	99.3	X76440
	1	<i>Paenibacillus peoriae</i> (T); DSM 8320	99.4	AJ320494
	2	<i>B. mycoides</i> (T); ATCC 6462	99.6	AB021192
	1	<i>B. altitudinis</i> (T); 41KF2b	99.8	AJ831842
	3	<i>B. circulans</i> (T); ATCC 4513	99.6	AY724690
	1	<i>Solibacillus silvestris</i> (T); HR3-23	99.6	AP012157
Farm 2, Summer	20	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
Farm 2, Winter	6	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	1	<i>B. pumilus</i> (T); ATCC 7061	99.4	AY876289

	1	<i>B. pumilus</i> (T); ATCC 7061	100	AY876289
	1	<i>B. kochii</i> (T); WCC 458	98.2	FN995265
	1	<i>Solibacillus silvestris</i> (T); HR3-23	99	AJ006086
	1	<i>B. rigui</i> (T); WPCB074	97	EU939689
	1	<i>Sporosarcina luteola</i> (T); Y1	98	AB473560
	1	<i>Paenibacillus polymyxa</i> (T); IAM 13419	99	D16276
Farm 3, Summer	ND	ND	ND	ND
Farm 3, Winter	6	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	2	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	1	<i>B. clausii</i> (T); DSM 8716	99	X76440
	4	<i>B. pumilus</i> (T); ATCC 7061	100	AY876289
	1	<i>Ornithinibacillus bavariensis</i> (T); WSBC 24001	98	Y13066
	3	<i>B. pumilus</i> (T); ATCC 7061	100	AY876289
	1	<i>B. cereus</i> (T); ATCC 14579	99	AE016877
	4	<i>B. clausii</i> (T); DSM 8716	99.3	X76440
	2	<i>Paenibacillus amylolyticus</i> (T); NRS-290T	99	D85396
Farm 4, Summer	8	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	11	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	3	<i>B. subtilis</i> (T); DSM10	99	AJ276351
	5	<i>B. clausii</i> (T); DSM 8716- 97.7%	99	X76440
	3	<i>Penibacillus timonensis</i> (T); 2301032	98	AY323612
	3	<i>Lysinibacillus fusiformis</i> (T); DSM 28	98	AJ310084
	1	<i>B. kochii</i> (T); type strain: WCC 4582	99	CP000002
Farm 4, Winter	14	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	2	<i>B. licheniformis</i> (T); ATCC 14580	100	CP000002
	1	<i>B. altitudinis</i> (T); 41KF2b	99.2	AJ831842
	2	<i>B. simplex</i> (T); DSM 1321T	98.2	AJ439078

	2	<i>B. simplex</i> (T); DSM 1321T	98.9	AJ439078
	4	<i>B. kochii</i> (T); WCC 4582	98.8	FN995265
	2	<i>Lysinibacillus fusiformis</i> (T); DSM 28	98.2	AJ310084
	1	<i>Penibacillus cookii</i> (T); LMG 18419	100	AJ250317
	2	<i>B. clausii</i> (T); DSM 8716-99.2%	99.2	X76440
	1	<i>B. pocheonensis</i> (T); Gsoil 420	96	AB245377
	1	<i>Penibacillus lactis</i> (T); MB 1871-98.6%	100	AY257868

The table depicts the sequence similarity to the closest related bacterial type strains. #The similarity has been verified using 16s rRNA sequencing and depicted in percentage. ND- not detected or under detectable numbers. Each of the isolate included in this table is a representative of different ERIC profiles obtained.

Supplementary Table S2. Presence of different aerobic spore forming bacteria in raw milk from each farm over two seasons

Aerobic spore forming bacteria	Number (%)of various aerobic spore forming bacteria							
	Summer				Winter			
	Farm 1	Farm 2	Farm 3	Farm 4	Farm 1	Farm 2	Farm 3	Farm 4
<i>B. licheniformis</i>	270 (90)	20 (100)		190 (55.8)	220 (66.7)	60 (46.1)	80 (33.3)	160 (50)
<i>B. circulans</i>					30 (9.1)			
<i>B. pumilus</i>	20 (6.6)					20 (15.3)	70 (29.2)	
<i>B. altitudinis</i>					10 (3.03)			10 (3.1)
<i>B. cereus</i>							10 (4.10)	
<i>B. mycoides</i>					20 (6.10)			
<i>B. clausii</i>				50 (14.7)	10 (3.03)		50 (20.8)	20 (6.25)
<i>B. simplex</i>								40 (12.5)
<i>B. kochii</i>				10 (2.9)		10 (7.7)		40 (12.5)
<i>B subtilis</i>				30 (8.8)				
<i>Paenibacillus spp</i>	10 (3.3)			30 (8.8)	30 (9.1)	10 (7.7)	20 (8.3)	20 (6.25)
other aerobic spore forming <i>Bacilli</i>				30 (8.8)	10 (3.03)	30 (23)	10 (4.1)	30 (9.30)
Total count (CFU/mL)	300	20	ND	340	330	130	240	320

Percentage depicts the prevalence of each bacterial species (identified by 16S rRNA sequencing) from the total number of colonies isolated from raw milk samples collected from each farm in each season.
ND: not detected