Table S1. Primers and real-time quantitative PCR conditions used

PCR target(gene)	Primer name	Primer sequence	Amplicon size	PCR cycling conditions	Reference
Total bacterial population (16S)	P1	CCTACGGGAGGCAGCAG	196 bp	94°C for 10 s, then 40 cycles of 94°C for 5 s, 58°C for15 s, 72°C for 15 s, and finally one cycle of 72°C for 5 min.	[38]
	P2	ATTACCGCGGCTGCTGG			
Total fungal population (18S)	F1	GCGGTAATTCCAGCTCCAATAG	151 bp	one cycle of 94°C for 10 s, then 45 cycles of 94°C for 5 s, 56°C for 15 s, 72°C for 15 s, and finally one cycle of 72°C for 5 min.	[38]
	F2	GCCACAAGGACTCAAGGTTAG			
Lactobacillus brevis (16S)	Lbrev F	TGCACTGATTTCAACAATGAAG	160 bp	2 min at 98°C followed by 35 cycles of 5 s at 98°C and 30 s at 56.5°C.	[39]
	Lbrev R	CCAGAAGTGATAGCCGAAGC			
Lactobacillus (16S)	F-lac	GCAGCAGTAGGGAATCTTCCA	349 bp	95°C for 30 s; 40 cycles of 95°C for 10 s and 62°C for 30 s.	[40]
	R-lac	GCATTYCACCGCTACACATG			
Saccharomyces (ITS1)	SC1	GAAAACTCCACAGTGTGTTG	124 bp	5 min at 98°C followed by 40 cycles of 15 s at 98°C, 30 s at 63°C, and 30 s at 72°C.	[41]
	SC2	GCTTAAGTGCGCGGTCTTG			

Table S2 Lactic acid bacteria isolated in fermented grains

Strain ID	Species	Related GenBank sequence	Identity (10%)
Lbu1	*Lactobacillus buchneri*	AB205055	100
Lbu2	*Lactobacillus buchneri*	AB205055	100
Lbu3	*Lactobacillus buchneri*	LC094429	99
Lbu4	*Lactobacillus buchneri*	HM058334.1	100
Lbu5	*Lactobacillus buchneri*	LC094429	99
Lbr6	*Lactobacillus brevis*	DQ268866	100
Lbr7	*Lactobacillus brevis*	KT780303	99
Lbr8	*Lactobacillus brevis*	DQ268866	100
Lbr9	*Lactobacillus brevis*	DQ268866	100
Lbr11	*Lactobacillus brevis*	DQ268866	100
Lbr11	*Lactobacillus brevis*	DQ268866	100
Lbr12	*Lactobacillus brevis*	DQ268866	99
Lbr13	*Lactobacillus brevis*	DQ268866	100
Lbr14	*Lactobacillus brevis*	AP012167	99
Lbr15	*Lactobacillus brevis*	AP012167	99
Lbr16	*Lactobacillus brevis*	LC062086	99
Lbr17	*Lactobacillus brevis*	KT780303	100
Lbr18	*Lactobacillus brevis*	DQ268866	99
Lbr19	*Lactobacillus brevis*	DQ268866	99
Lbr20	*Lactobacillus brevis*	KU315055	100
Lbr21	*Lactobacillus brevis*	DQ268866	99
Lbr22	*Lactobacillus brevis*	DQ268866	99
Lbr23	*Lactobacillus brevis*	DQ268866	100
Lbr24	*Lactobacillus brevis*	DQ268866	100
Lbr25	*Lactobacillus brevis*	DQ268866	100
Lbr26	*Lactobacillus brevis*	DQ268866	100
Lca27	*Lactobacillus casei*	HM058794	99
Lca28	*Lactobacillus casei*	HM058896	100
Lca29	*Lactobacillus casei*	HM058896.1	100
Lca30	*Lactobacillus casei*	HM058896.1	100
Lca31	*Lactobacillus casei*	HM058839.1	100
Lpa32	*Lactobacillus paracasei*	KU315090	100
Lpa33	*Lactobacillus paracasei*	KT962976	100
Lpa34	*Lactobacillus paracasei*	FM878598	99
Lpa35	*Lactobacillus paracasei*	KU315079.1	99

Lpa36	*Lactobacillus paracasei*	KU315090.1	100
Lhi37	*Lactobacillus hilgardii*	FM878600	100
Lhi38	*Lactobacillus hilgardii*	LC064898	99
Lhi39	*Lactobacillus hilgardii*	FM878600	100
Lhi40	*Lactobacillus hilgardii*	AB262962	99
Lhi41	*Lactobacillus hilgardii*	AB262962	99
Lhi42	*Lactobacillus hilgardii*	AB262962	100
Lhi43	*Lactobacillus hilgardii*	AB262962	100
Lhi44	*Lactobacillus hilgardii*	AB262962	100
Lhi45	*Lactobacillus hilgardii*	AB262962	99
Lhi46	*Lactobacillus hilgardii*	LC064898	100
Lhi47	*Lactobacillus hilgardii*	LC064898	100
Lhi48	*Lactobacillus hilgardii*	LC064898	100
Lhi49	*Lactobacillus hilgardii*	AB262962	99
Lhi50	*Lactobacillus hilgardii*	FM878600	100

Table S3 Yeasts isolated in fermented grains

Strain ID	Species	Related GenBank sequence	Identity (10%)
Pf1	*Pichia fermentans*	KC494719.1	100
Ho2	*Hanseniaspora osmophila*	GU080047.1	99
Ho3	*Hanseniaspora osmophila*	GU080047.1	99
Ho4	*Hanseniaspora osmophila*	JQ512840.1	99
Sf5	*Saccharomycopsis fibuligera*	CP012809.1	100
Sf6	*Saccharomycopsis fibuligera*	CP012809.1	100
Sc7	*Saccharomyces cerevisiae*	EF192587.1	99
Sc8	*Saccharomyces cerevisiae*	KX119943.1	99
Sc9	*Saccharomyces cerevisiae*	HM191652.1	99
Sc10	*Saccharomyces cerevisiae*	HM191649.1	100
Sc11	*Saccharomyces cerevisiae*	KU862641.1	100
Sc12	*Saccharomyces cerevisiae*	GU080048.1	100
Sc13	*Saccharomyces cerevisiae*	HM191661.1	99
Sc14	*Saccharomyces cerevisiae*	KX428530.1	99
Sc15	*Saccharomyces cerevisiae*	HM107800.1	99
Sc16	*Saccharomyces cerevisiae*	EU884435.1	100
Sc17	*Saccharomyces cerevisiae*	HM191661.1	100
Sc18	*Saccharomyces cerevisiae*	KY109244.1	99
Sc19	*Saccharomyces cerevisiae*	KX428529.1	99
Sc20	*Saccharomyces cerevisiae*	HM101472.1	99
Sc21	*Saccharomyces cerevisiae*	HM107783.1	99
Sc22	*Saccharomyces cerevisiae*	HM191648.1	100
Sc23	*Saccharomyces cerevisiae*	KX428530.1	99
Sc24	*Saccharomyces cerevisiae*	KM527244.1	99
Sc25	*Saccharomyces cerevisiae*	KY109393.1	100
Wa26	*Wickerhamomyces anomalus*	KY110104.1	99

Reference

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