

Production performance and rumen bacterial community structure of Hu sheep fed fermented spent mushroom substrate from *Pleurotus eryngii*

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Table S.1. Effects of different fermented *Pleurotus eryngii* mushroom substrate addition on the meat quality of Hu sheep

Treat ment	MCP (%)	pH (1 h)	pH (24 h)	DR (% , 24 h)	DR (% , 48h)
RL1	57.41±0.88a	6.23±0.30a	6.14±0.27a	1.30±0.59a	1.73±0.30a
RL2	55.69±0.40a	5.99±0.11a	5.88±0.05a	1.14±0.34a	1.73±0.58a
RL3	59.66±0.22a	6.42±0.51a	6.03±0.07a	0.79±0.18a	1.89±0.75a
RL4	58.78±2.81a	6.13±0.06a	6.00±0.04a	0.82±0.39a	1.31±0.01a

Note: A different letter in each column indicates a significant difference ($p<0.05$, $n=3$).

Table S.2 The α diversity index of rumen bacterial community of Hu sheep fed with different fermented *Pleurotus eryngii* mushroom substrate addition

Items	Observed species	Shannon index	Simpson index	Chao1 index	ACE index
RL0	377.00±179.16b	3.23±3.00b	0.50±0.40b	432.65±191.05b	414.28±193.31b
RL1	945.00±15.56a	7.06±0.24a	0.97±0.01a	1136.76±196.91a	1105.47±130.84a
RL2	991.00±93.34a	7.32±0.25a	0.98±0.00a	1067.60±101.55a	1076.94±96.76a
RL3	1083.00±33.94a	7.38±0.12a	0.98±0.00a	1140.77±29.31a	1160.95±29.60a
RL4	983.00±19.80a	7.09±0.43a	0.97±0.01a	1070.23±25.21a	1072.77±29.50a

Note: A different letter in each column indicates a significant difference ($p<0.05$, $n=3$).

Table S.3 Dry matter nutrients of raw materials and mixed fermentation materials of spent mushroom substrate from *Pleurotus eryngii* (%)

Items	Raw materials	Mixed fermentation materials
Moisture	55.45	46.79
Crude protein	6.16	6.55
Crude fiber	19.45	31.75
Neutral detergent fiber	70.92	59.98
Acid detergent fiber	59.07	44.09
Crude ash	10.93	9.43

Table S.4 Diet formula and nutritional level of Hu sheep (Dry matter base)

Items	Group			
	RL1	RL2	RL3	RL4
Fermented mushroom substrate(%)	0	15	30	45
Peanut seedlings(%)	45	32	19	8
Corn(%)	25	21	18	14
Wheat bran(%)	12.5	14.5	15.5	15.5
Soybean meal (%)	11	11	11	11
Dicalcium phosphate(%)	1	1	1	1
Salt(%)	0.5	0.5	0.5	0.5
Premix(%)	5	5	5	5
Total(%)	100	100	100	100
Nutritional level				
Crude protein(%)	14.62	14.38	14.24	14.06
Neutral detergent fiber(%)	35.79	36.85	37.86	38.04
Acid detergent fiber (%)	28.42	29.33	30.57	31.53
Calcium(%)	1.44	1.48	1.52	1.54
Phosphorus(%)	0.5	0.54	0.56	0.58
Metabolic energy(MJ·kg ⁻¹)	9.65	9.71	9.74	9.77

Note: Per kilogram of premix contain Vitamin A>100 000 IU; Vitamin D₃ 40 000~80 000 IU; Vitamin E>700 IU; Iron 1.2~3.5 g; Copper 0.3~0.9 g; Manganese 1~3 g; Zinc 2.0~5.5 g; Iodine 20~60 mg; Selenium 10~30 mg; Drill 15~45 mg; Calcium 8.5%~20%; Total phosphorus >3.5%; Sodium chloride 20%~30%.

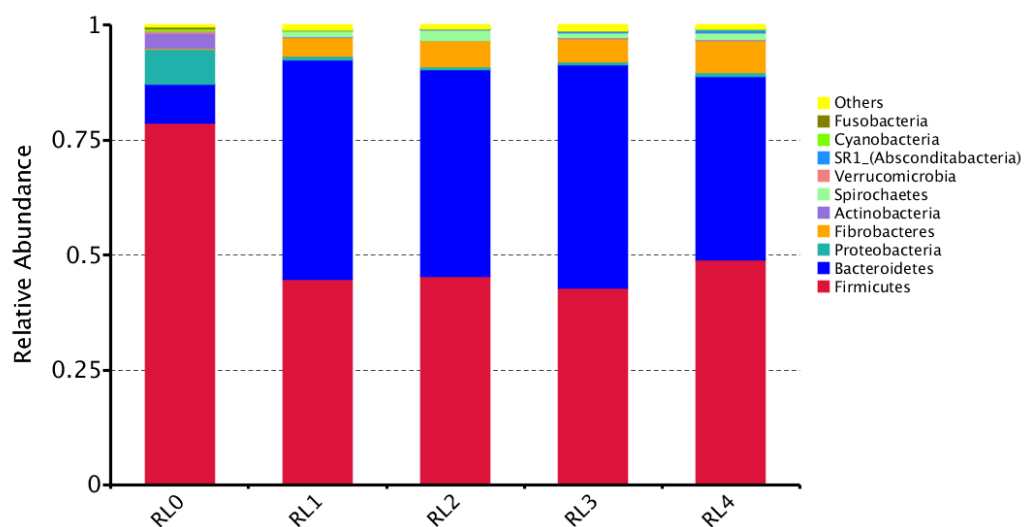


Figure S.1 Relative abundance of rumen bacterial community of Hu sheep fed with different fermented *Pleurotus eryngii* mushroom substrate addition based on phylum level