Effect of *Lactobacillus plantarum* from different areas on fermentation quality of mixture silages of mixture silages of alfalfa, wheat bran and corn husk

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Our objective is to study the effect of *lactobacillus plantarum* from different areas on fermentation quality of mixture silages of alfalfa, wheat bran and corn husk. Mixture silages were ensiled for 60 days treated as followed: alfalfa/wheat bran mixtures (containing 0, 10, 15, 20% wheat bran based on fresh weight) and alfalfa/corn husk mixtures (containing 10, 15, 20% corn husk based on fresh weight). *Lactobacillus plantarum* was extracted from alfalfa silages, one (LP1) is from Huanghua and the other (LP2) was from Beijing. *Lactobacillus plantarum* could decrease the pH value and acetic acid and ammonia nitrogen contents to total nitrogen, and increase the rate of lactic acid/acetic acid than silages untreated. The LP1 had better effects on the decrease of pH value and production of lactic acid for alfalfa silages. However, the LP2 had better effects on mixture silages. *Lactobacillus plantarum* isolated from different areas can promote the fermentation quality of silages, while theses effects are differ.

Table 1. Fermentation quality of mixture silages treated with *Lactobacillus plantarum* from different regions

		alfalfa	alfalfa / wheat bran			alfalfa / corn husk				*P*-value		
	Inoculant	100	90/10	85/15	80/20	90/10	85/15	80/20	SEM	I	M	I×M
DM（%）	N	25.2	32.1	34.3	37.6	33.6	35.3	38.9	0.54	0.017	<0.001	0.977
	LP1	26.7	32.3	35.2	37.7	33.1	36.5	39.7				
	LP2	26.9	32.6	36.1	39.3	34.4	36.4	39.9				
pH	N	5.28	4.51	4.45	4.43	4.72	4.59	4.53	0.03	<0.001	<0.001	<0.001
	LP1	4.58	4.45	4.41	4.23	4.49	4.47	4.47				
	LP2	4.73	4.52	4.42	4.4	4.51	4.47	4.21				
Lactic acid（%DM）	N	6.54	8.98	7.18	7.42	6.62	6.17	6.28	0.19	0.709	<0.001	0.252
	LP1	8.12	8.13	7.25	7.51	6.51	4.65	5.01				
	LP2	6.36	7.06	8.51	8.13	6.89	5.48	5.27				
Acetic acid（%DM）	N	1.58	1.05	0.58	0.53	1.84	1.61	1.29	0.05	<0.001	<0.001	0.045
	LP1	1.52	0.93	0.68	0.64	1.19	0.85	0.96				
	LP2	1.17	0.66	0.62	0.48	1.19	0.97	0.93				
Lactic acid/acetic acid	N	4.17	8.76	12.41	14.15	3.6	3.88	4.86	0.49	<0.001	<0.001	<0.001
	LP1	5.33	8.82	10.59	11.72	5.46	5.47	5.24				
	LP2	5.45	10.58	13.8	17.04	5.8	5.62	5.68				
AN/TN (%DM)	N	11.13	7.34	5.46	5.84	7.78	10.72	7.63	0.31	<0.001	<0.001	<0.001
	LP1	6.73	7.77	7.22	5.39	7.29	4.8	4.29				
	LP2	6.18	3.92	3.72	3.4	4.82	4.49	3.7				

DM, Dry matter; AN / TN, Ammonia Nitrogen/ total nitrogen; N, silages untreated; I, inoculant effect; M, mixture effect; I×M, interaction effect of I and M.