

## Supplemental Material

Supplemental Material of the article “Effects of a chemical additive on the fermentation, microbial communities, and aerobic stability of corn silage with or without air stress during storage”

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Table S1. Alpha diversity indexes of the bacterial and fungal communities, as analyzed by the sequencing of the V4-V5 region of the 16S rRNA and ITS1 using Illumina Miseq, of fresh forage and corn silage untreated or treated with an additive containing sodium benzoate, potassium sorbate, and sodium nitrite subjected or not to a 2h/week air stress ensiled for 63 d.

Item	Bacteria				Fungi			
	Observ	Chao	Shann	Simps	Obser	Chao1	Shan	Simps
CTRL 0 d	321.25	357.1	4.42 <sup>a</sup>	0.96 <sup>a</sup>	51.75 <sup>a</sup>	54.40 <sup>a</sup>	1.73 <sup>a</sup>	0.60 <sup>a</sup>
CTRL-NS 63 d	357.25	436.1	3.34 <sup>b</sup>	0.87 <sup>ab</sup>	41.25 <sup>a</sup>	43.25 <sup>a</sup>	1.01 <sup>b</sup>	0.37 <sup>ab</sup>
CTRL-AS 63 d	309.00	381.9	2.67 <sup>bc</sup>	0.81 <sup>b</sup>	34.00 <sup>a</sup>	41.67 <sup>a</sup>	0.70 <sup>b</sup>	0.31 <sup>ab</sup>
SF2-NS 63 d	311.00	407.8	2.27 <sup>c</sup>	0.69 <sup>c</sup>	51.50 <sup>a</sup>	52.69 <sup>a</sup>	2.12 <sup>a</sup>	0.71 <sup>a</sup>
SF2-AS 63 d	312.25	371.6	3.00 <sup>b</sup>	0.84 <sup>b</sup>	9.00 <sup>b</sup>	15.50 <sup>b</sup>	0.11 <sup>c</sup>	0.04 <sup>b</sup>
SEM	25.47	21.95	0.16	0.03	5.93	5.80	0.25	0.10
<i>P</i> – value	0.65	0.14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

<sup>a-c</sup>Means in columns with unlike superscripts differ ( $P < 0.05$ ).

CTRL = untreated; NS = no air stress; AS = 2 h/week air stress; SF2 = 2.0 L of Safesil (SF, active ingredients of sodium benzoate, potassium sorbate, and sodium nitrite; Salinity, Göteborg, Sweden)/t of fresh forage.

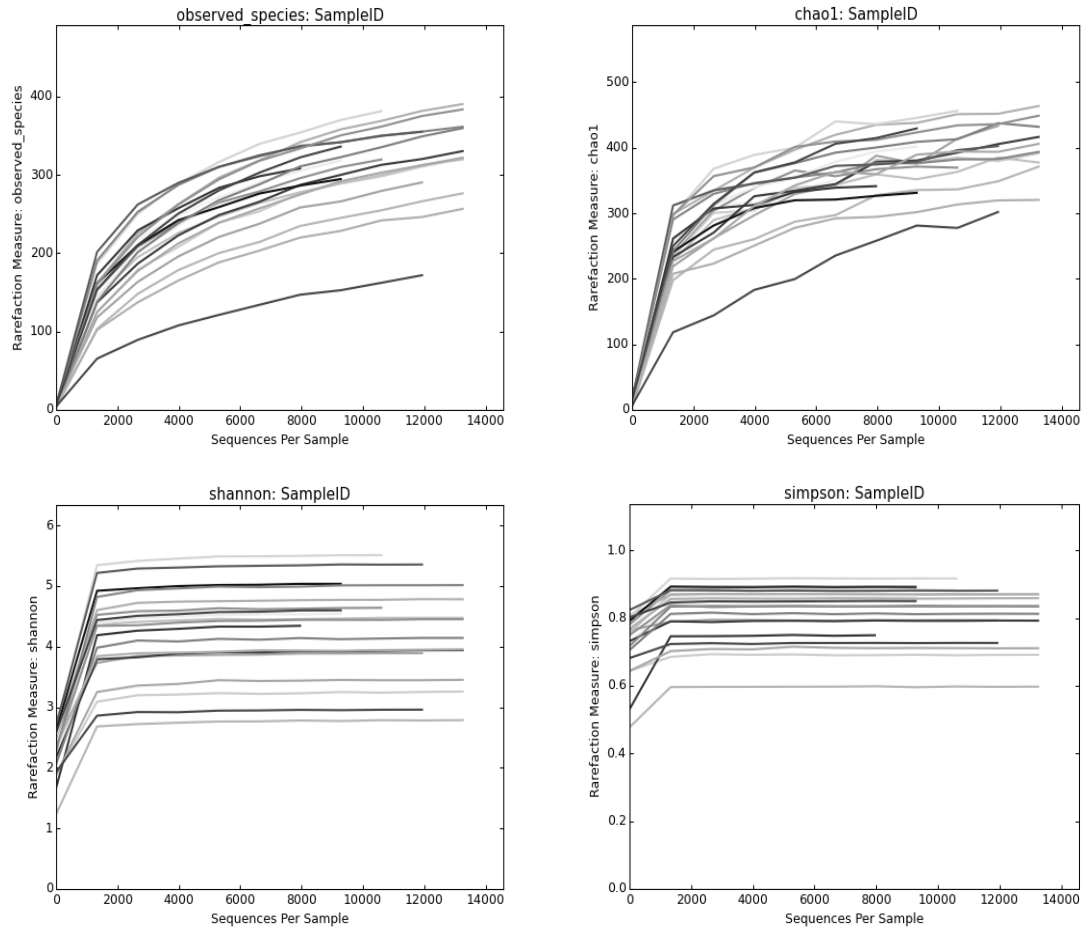


Figure S1. Alpha diversity rarefaction curves of bacterial OTU of fresh forage and silage untreated or treated with an additive containing sodium benzoate, potassium sorbate, and sodium nitrite at 2L/t of fresh forage weight ensiled for 63 d, not subjected or subjected to a 2 h/week air stress.

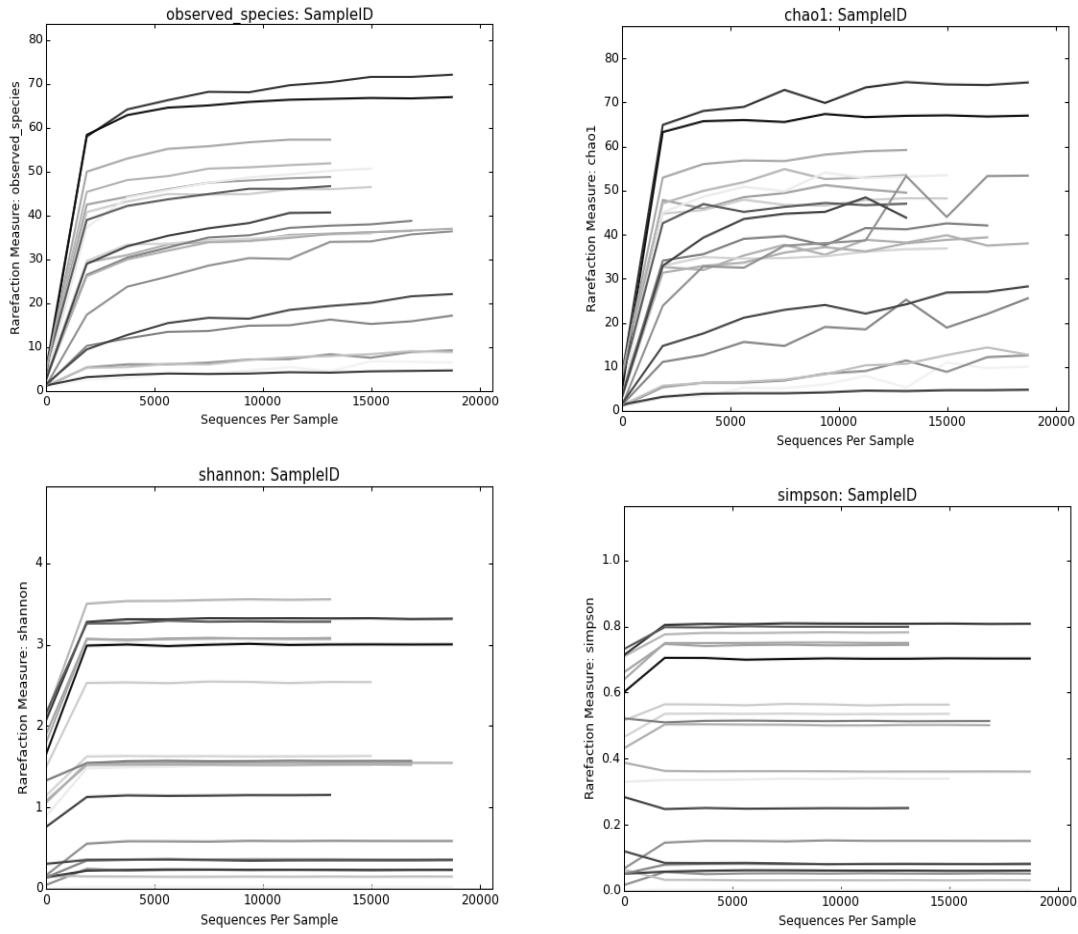


Figure S2. Alpha diversity rarefaction curves of fungal OTU of fresh forage and silage untreated or treated with an additive containing sodium benzoate, potassium sorbate, and sodium nitrite at 2L/t of fresh forage weight ensiled for 63 d, not subjected or subjected to a 2 h/week air stress.

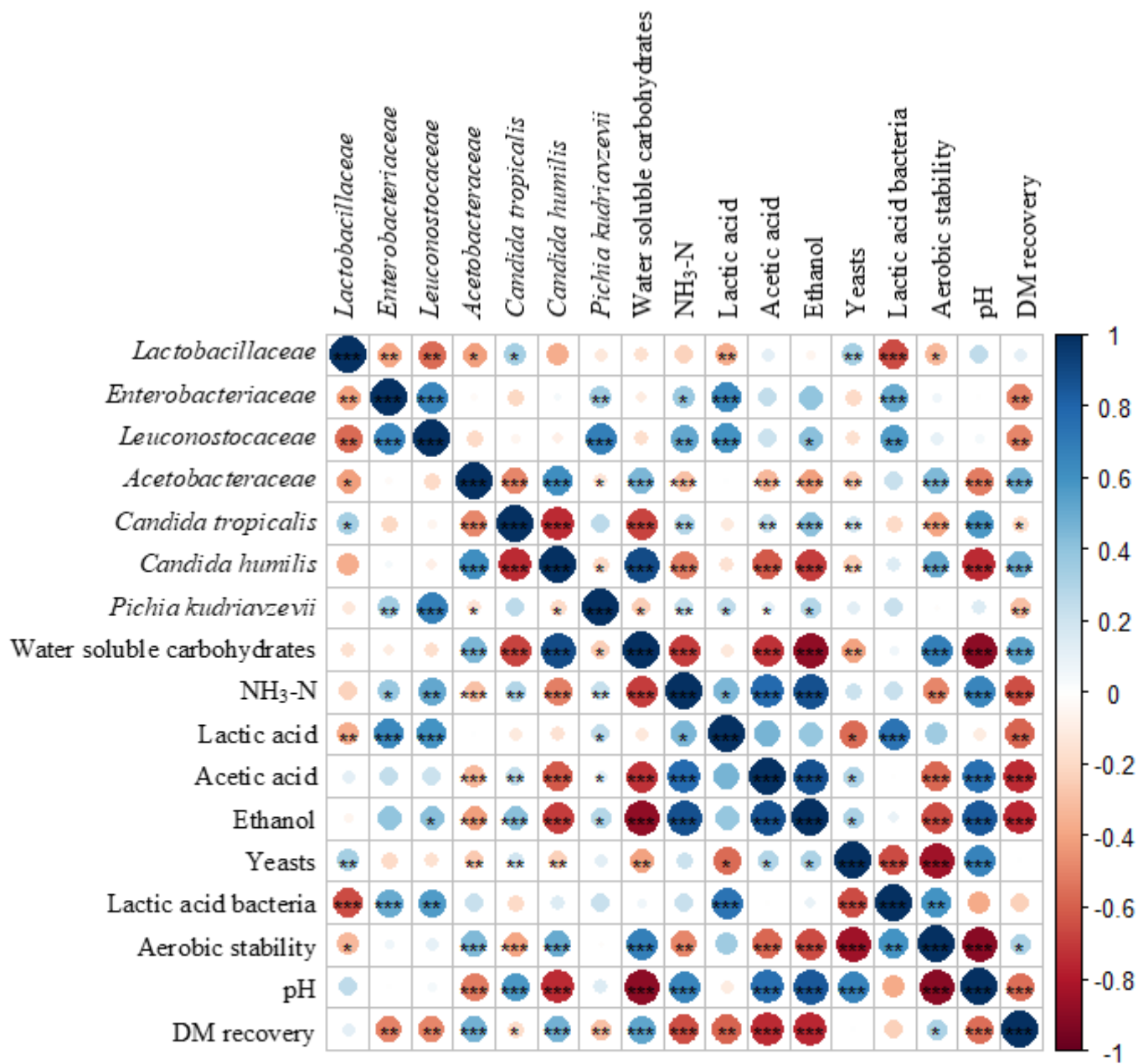


Figure S3. Pearson correlation coefficient matrix comparing microbial community data and silage variables. Negative correlations are red; positive correlations are blue. Strength of the correlation is indicated by dot size and red or blue color saturation. The statistical significance is shown by the symbols \*, \*\*, \*\*\*, representing a significance of <0.05, <0.01, and <0.0001, respectively.