

**Table supplementary 1.** Nutritional value of the three feed ingredients (%).

	Whole-plant corn silage	Concentrate feeding	Corn protein powder
Moisture	73.64	8.65	8.30
CF	1.48	4.14	1.17
ASH	5.71	21.31	3.66
CP	7.56	40.18	67.22
Ca	0.30	3.29	0.18
P	0.20	1.08	0.54
ADF	35.25	15.48	8.97
ADICP	0.35	4.06	11.56
NDF	55.26	20.63	20.74
NDICP	0.24	6.18	5.98
ADL	4.95	4.34	3.30
NFC	30.24	19.92	13.19
tdNFC	29.63	19.52	12.93
tdNDF	30.97	3.15	4.84
tdCP	7.15	35.59	54.69
tdFA	0.48	3.14	0.17

CP: Crude protein, Ca: Calcium, P: Phosphorus, ADF: Acid Detergent Fiber, NDF: Neutral Detergent Fiber, ADICP: acid detergent insoluble crude protein, NDICP: neutral detergent insoluble crude protein, ADL: acid detergent lignin, NFC: non-fiber carbohydrate, tdNDF: truly digestible neutral detergent fiber, tdNFC: truly digestible non-fiber carbohydrate, tdCP: truly digestible crude 102 protein, tdFA: truly digestible fatty acids.

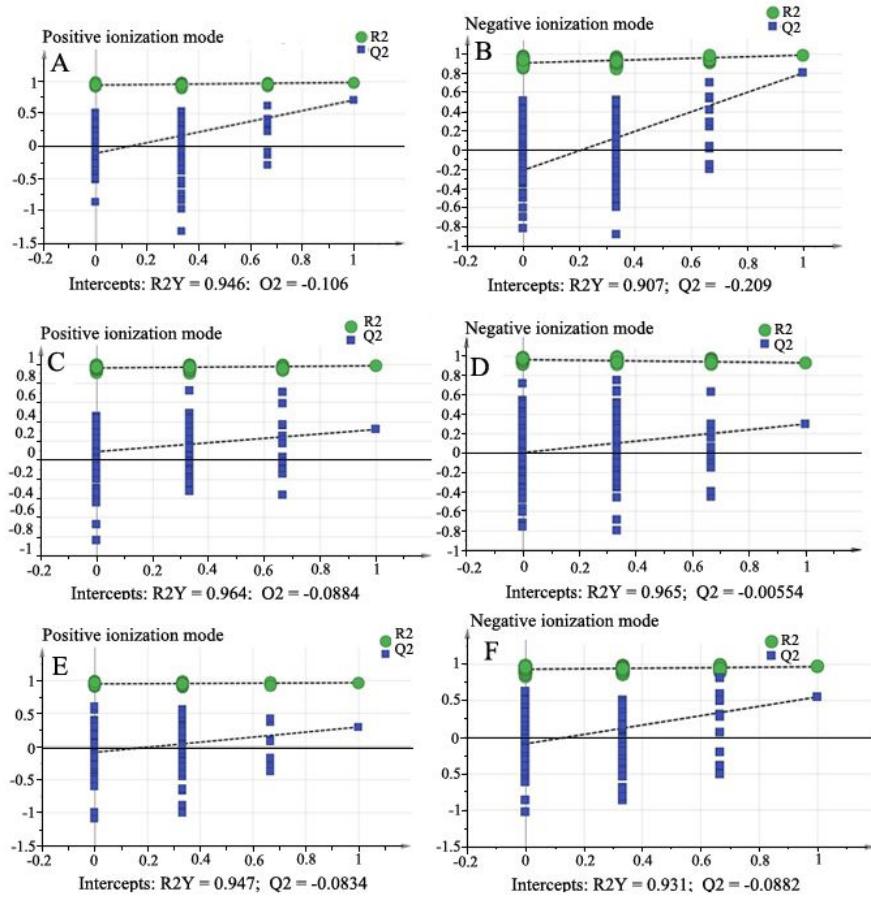
## **Figure captions**

**Fig. S1. Differentiation of the metabolic profiles of the HH vs. HB, HB vs. TNB and HH vs. TNH groups using multivariate analysis.** (A-F) Validation plots of the orthogonal partial least-squares discriminant analysis (OPLS-DA) models for the corresponding LC-MS data of the serum metabolome in both positive and negative ionization mode

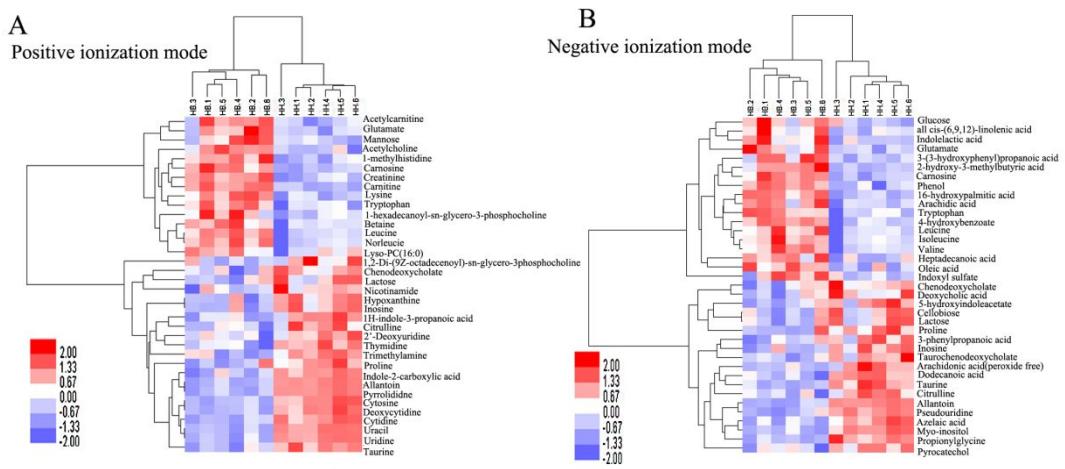
**Fig. S2. Hierarchical clustering of the metabolite profiles from HB vs. HH.** (A) positive ion mode, (B) negative ion mode. Red represents increases in metabolite levels, and blue represents decreases in metabolite levels. X axis: hierarchical clustering of samples, Y axis: the hierarchical clustering of metabolites.

**Fig. S3. Hierarchical clustering of the metabolite profiles from HB vs. TNB.** (A) positive ion mode, (B) negative ion mode. Red represents increases in metabolite levels, and blue represents decreases in metabolite levels. X axis: the hierarchical clusters for samples, Y axis: the hierarchical clusters for metabolites.

**Fig. S4. Hierarchical clustering of the significantly metabolite profiles from HH vs. TNH.** (A) positive ion mode, (B) negative ion mode. Red represents increases in metabolite levels, and blue represents decreases in metabolite levels. X axis: the hierarchical clusters for samples, Y axis: the hierarchical clusters for metabolites.

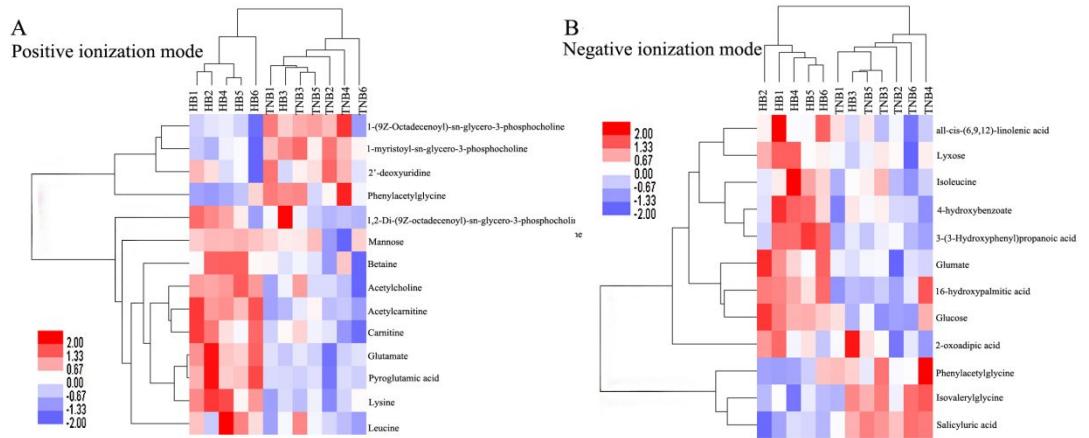


**Figure S1.**

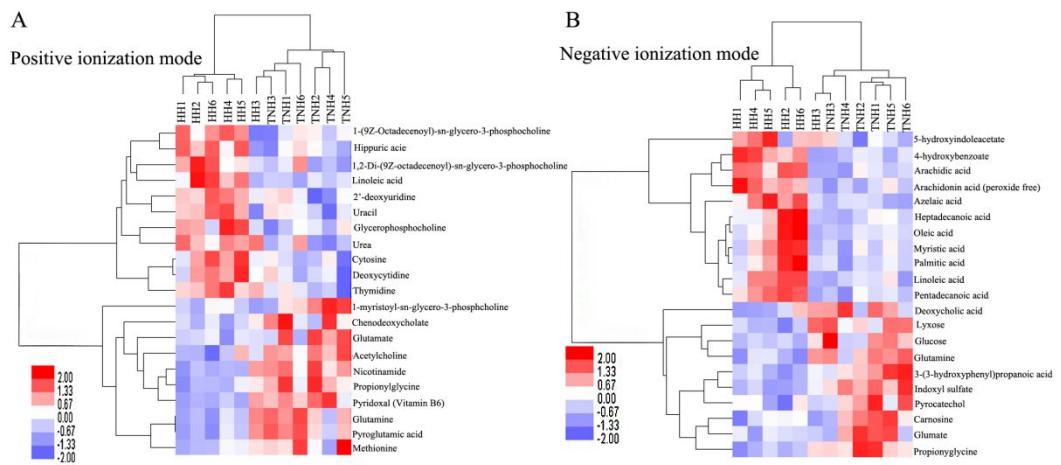


**Figure**

**S2.**



**Figure S3.**



**Figure S4.**