

**Supplementary Table S4.** Principal Component Analysis of silage-IvCS variables: correlations between the Principal Components and the original variables.

Variables	CP 1	CP 2
pH	0,01	-0,43
LAB	-0,18	-0,004
TMB	-0,11	0,7
Yeast	0,09	-0,18
RSs	0,61	-0,47
N-NH <sub>3</sub>	-0,56	0,48
Lactate	-0,39	-0,03
Acetate	-0,48	-0,69
L:A	0,23	0,79
Ethanol	-0,49	-0,18
Total acids	-0,39	-0,14
TPC	-0,71	0,46
DMloss	0,09	-0,49
OM	-0,41	-0,37
CP	0,1	0,27
aNDF	-0,21	0,85
ADF	0,04	0,76
ADL	-0,07	0,13
Hemic	-0,47	0,62
Cell	0,09	0,75
IVDMD	-0,27	-0,79
IVDNDF	-0,58	0,13
IVNDFD	-0,37	-0,32
IsdNDF	0,4	0,63
IsNDFD	0,61	0,53
IsdADF	0,56	0,53
IsADFD	0,68	0,35
ADIN	-0,22	-0,28
FAE-37C	0,82	-0,03
ΔpH12-CSM	-0,8	0,32
ΔpH24-CSM	-0,68	0,36
ΔpH48-CSM	-0,63	0,17
ΔCFU48-CSM	-0,47	0,61
RSs-CSM	0,5	-0,22
FAE-pH4	0,76	0,13
FAE-pH5	0,77	0,03
FAE-pH6	0,78	0,01
FAE-18C	0,79	0,04

Significance levels of each correlation coefficients are presented. LAB: Lactic acid bacteria. TMB: Total mesophilic bacteria. DM: dry matter. OM: Organic matter. CP: crude protein. RSs: Reducing sugars. L:A: Lactate: acetate ratio. TPC: total phenolic compounds. DMloss: Dry matter loss. ADIN: Acid detergent insoluble nitrogen. aNDF: neutral detergent fiber, expressed inclusive of residual ash. ADF: acid detergent fiber. ADL: Acid detergent lignin. Cell: Cellulose. Hemic: Hemicellulose. IVDMD: *In vitro* dry matter true digestibility. Is/IvdNDF: *In situ/in vitro* digestible aNDF, respectively. Is/IvNDFD: *In situ/in vitro* aNDF digestibility, respectively. IsdADF: *In situ* digestible ADF. IsADFD: *In situ* ADF digestibility. FAE-37C: FAE quantification at 37 °C-pH 7.0. FAE-18C: FAE quantification at 18 °C-pH 7.0. FAE-pH4/5/6: FAE activity

quantification at 37 °C-pH 4.0,5.0 or 6.0, respectively.  $\Delta\text{pH}_{12/24/48}\text{-CSM}$ :  $\Delta\text{pH}$  at 12/24/48 h of incubation in Corn Stover Soluble Fraction Medium (CSM).  $\Delta\text{CFU}_{48}\text{-CSM}$ :  $\Delta\text{Log CFU mL}^{-1}$  at 48 h of incubation in CSM. RSs-CSM: Reducing sugars at 48 h of incubation in CSM.