Table S1. Biodiversity indices of different pretreated inocula when xylose fermentation ended.

Groups	Abundance				Diversity	Evenness
	Number	OTUs	Chao	Ace	Shannon	Shannon even
SMC-100	51056	372	398.1	402.1	1.4321	0.2420
MMC-100	46211	355	391.0	401.5	0.9619	0.1638
SN-100	115680	23	23.25	24.43	1.2911	0.4118
MN-100	51097	389	417.7	425.6	1.7953	0.3010

(S, activated sludge; M, methanogenic digester slurry; MC, Fe/Mn modified straw biochar addition; N, control group; '-100' means substrates were pure xylose).

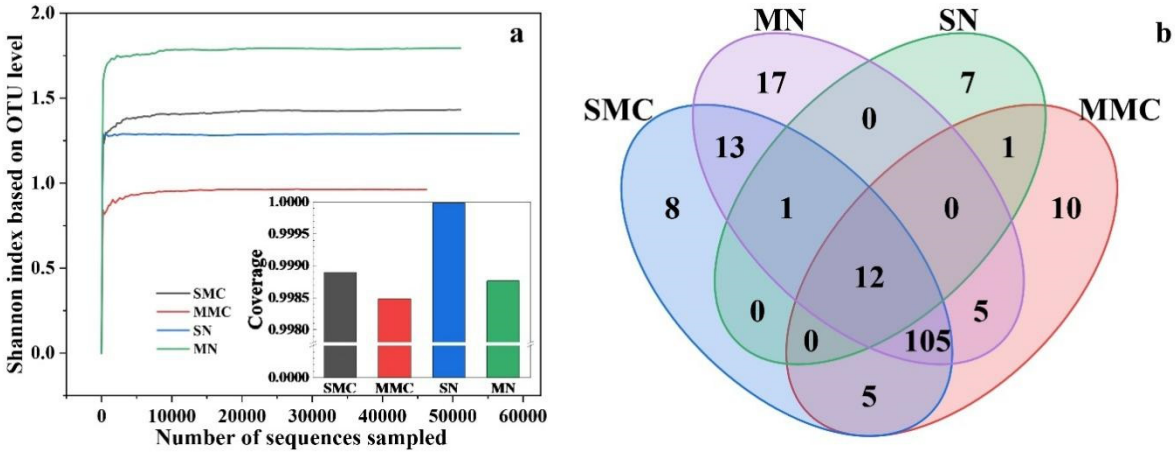


Figure S1. Effects of different treatments on microbial community structure: (a) Rarefaction curves with coverage indices; (b) Venn diagram at the genus level (S, activated sludge; M, methanogenic digester slurry; MC, Fe/Mn modified straw biochar addition; N, control group).

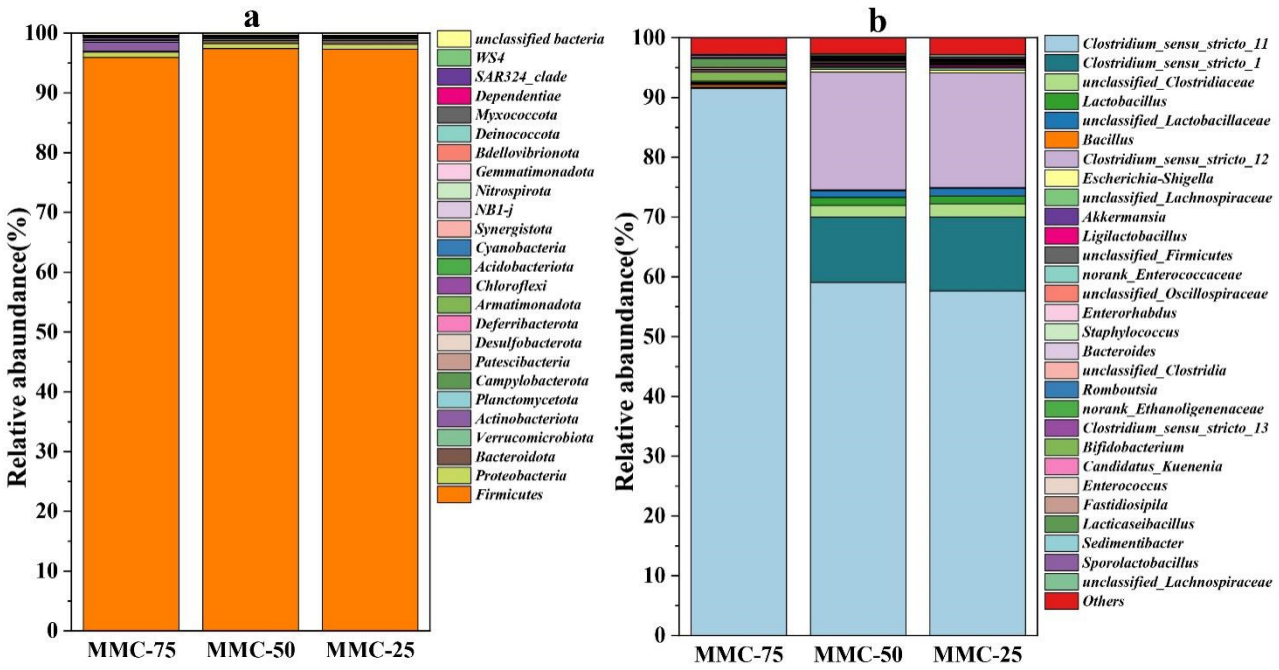


Figure S2. Microbial relative abundance at the phylum (a) and genus (b) levels after fermentation with mixed sugar as the substrate using MMC inoculum (S, activated sludge; M, methanogenic digester slurry; MC, Fe/Mn modified straw biochar addition; N, control group).