

Table S1. Date and climate information of sampling and treatment days.

Date	Average temperature	Precipitation	Sampling
2021, April, 5	8.0°C	0.0 mm	One day before FCG treatment
2021, April, 6	11.8°C	0.0 mm	FCG treatment
2021, April, 7	14.5°C	0.0 mm	One day after FCG treatment
2021, April, 9	7.3°C	0.2 mm	Three days after FCG treatment
2021, April, 13	14.9°C	0.1 mm	One week after FCG treatment
2021, April, 20	17.3°C	0.0 mm	Two weeks after FCG treatment
2021, April, 27	14.7°C	0.0 mm	Three weeks after FCG treatment

This supplementary table provides the climate information of treatment and sampling dates.

Table S2. The list of FCG core family and manure core family

FCG core family	Manure core family
<i>Bacillaceae</i>	<i>Bacteroidaceae</i>
<i>Moraxellaceae</i>	<i>Muribaculaceae</i>
<i>Pseudomonadaceae</i>	<i>Prevotellaceae</i>
<i>Rhodanobacteraceae</i>	<i>Rikenellaceae</i>
	<i>Uncultured_Bacteroidales</i>
	<i>RF39</i>
	<i>Unclassified_Clostridia</i>
	<i>Christensenellaceae</i>
	<i>Clostridia_UCG-014</i>
	<i>Lachnospiraceae</i>
	<i>Monoglobaceae</i>
	<i>Butyricicoccaceae</i>
	<i>Oscillospiraceae</i>
	<i>Ruminocococcaceae</i>
	<i>UCG-010</i>
	<i>Eubacterium</i>
	<i>Peptostreptococcaceae</i>
	<i>Akkermensia</i>
Total 4 family	Total 18 family

This supplementary table provides the list of core families detected in FCG and manure.