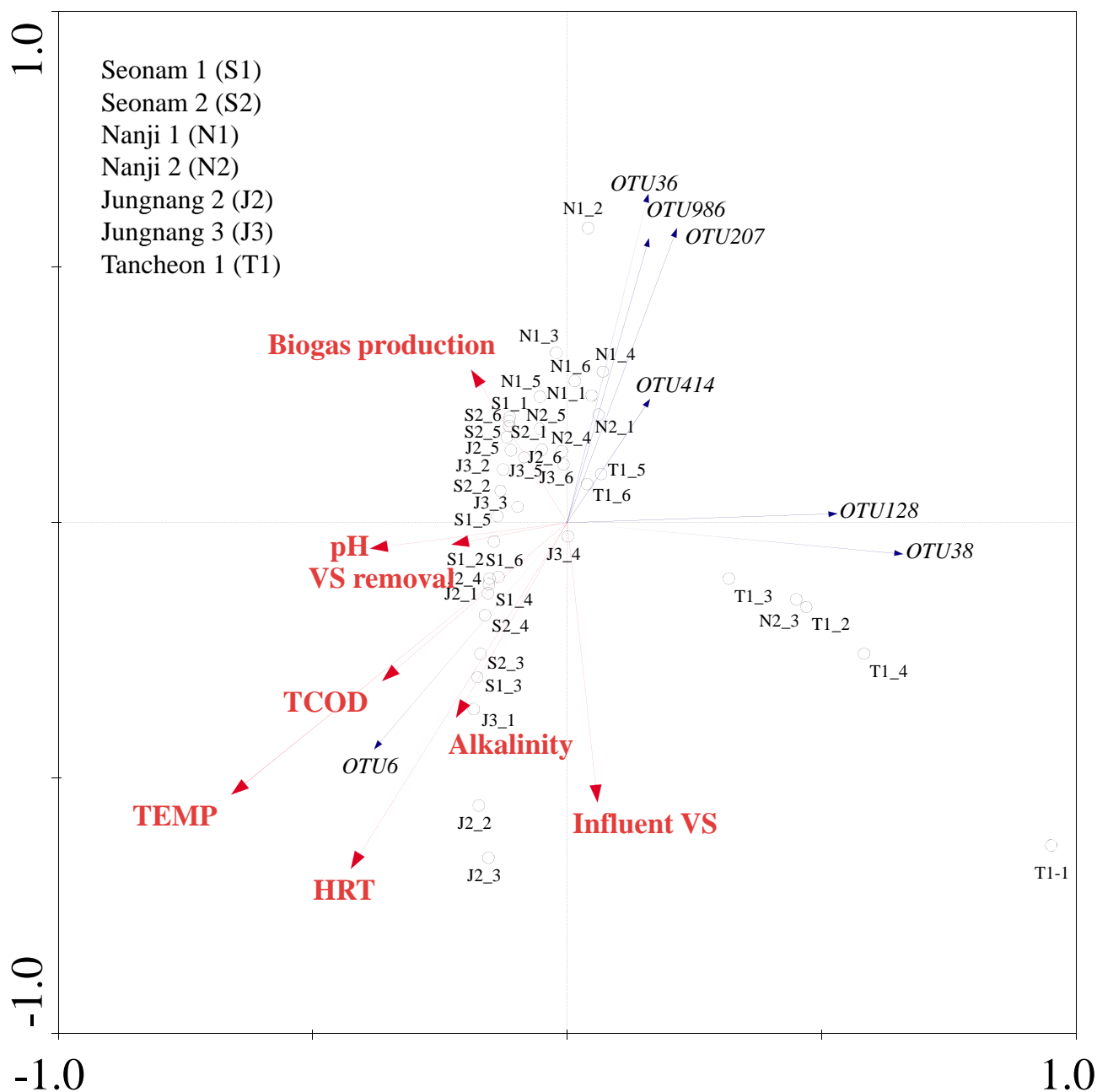


**Supplemental Fig. 1.** Distribution of core OTUs within *Spirochaetes* for the seven anaerobic digesters. Error bars indicate standard deviations.



**Supplemental Fig. 2.** RDA ordination of core OTUs within *Spirochaetes* for 40 sludge samples in the seven anaerobic digesters. Statistically significant ( $P < 0.05$ ) and insignificant ( $P > 0.05$ ) explanatory variables are indicated in red solid and red dotted arrows, respectively. Spirochaetal core OTUs indicate in blue arrows. The direction of the arrow indicates the direction of increase of each variable and the length of the arrow indicates the strength of the correlation with the ordination axis. Sludge samples are indicated in open circles with digester name. The numbers beside the sample names indicate month when the sample was collected (1: January, 2: February, 3: March, 4: April, 5: May, 6: June).