***Microorganisms***

**Electronic Supplementary Material for**

**Shifts in sodic soil bacterial communities associated with different** **alkali vegetation types**

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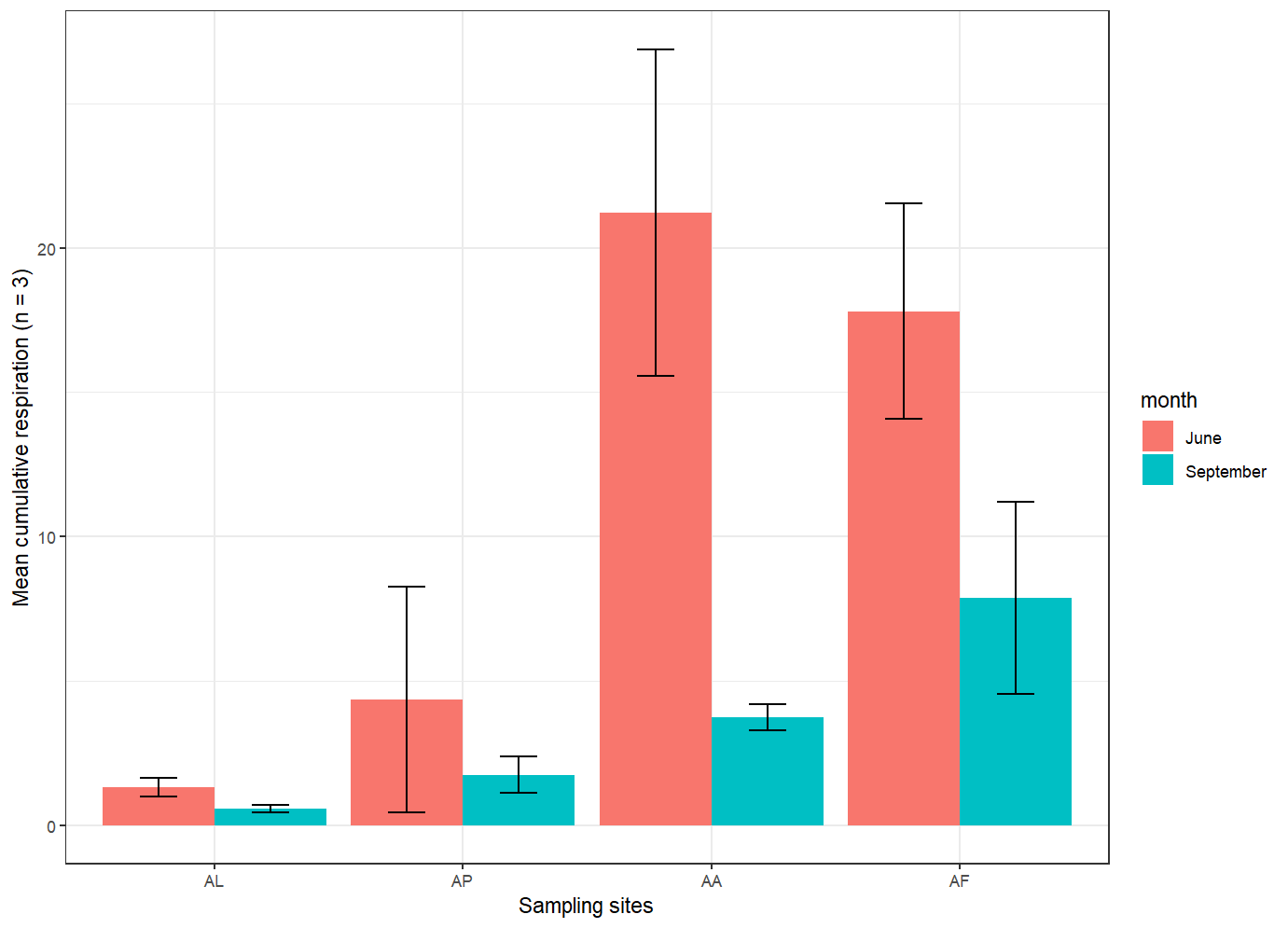
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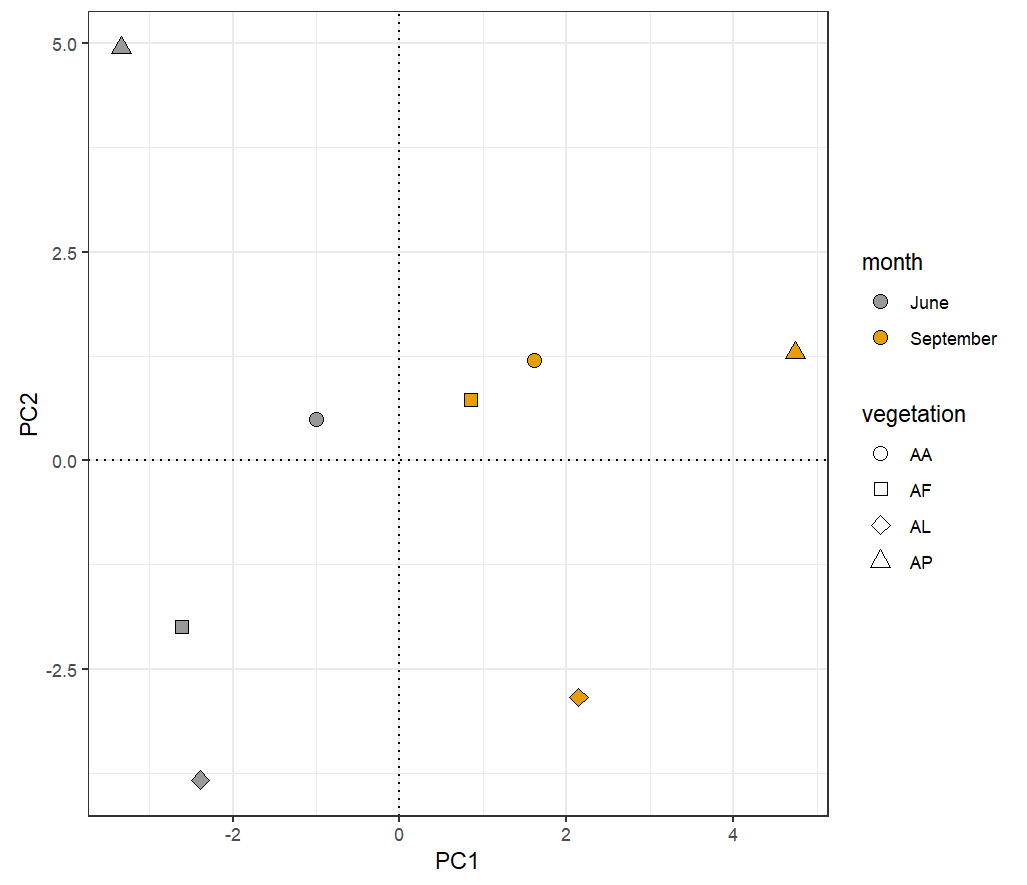
**Figure S1.** Mean basal respiration rates (± S.D., n = 3; µg CO2-C\*g soil-1\*h-1) of the soil samples from the four sites. Samples are bare spot (AL), Puccinellia sward (AP), Artemisia alkali steppe (AA) and Achillea alkali steppe (AF), with June (-06) and September (-09) sampling are presented. Basal soil respiration was assessed from MicroResp short term incubation (5-hours) without substrate addition, only distilled water was added in the same volume as the other wells with substrate solutions. 6 parallel wells per sample was used.



**Figure S2.** Means (± S.D., n = 3) of the summarized substrate induced respiration rates (µg CO2-C\*g soil-1\*h-1) of the soil samples after addition of 15 different substrates from the four sites in two samplings, June and September. Samples are bare spot (AL), Puccinellia sward (AP), Artemisia alkali steppe (AA) and Achillea alkali steppe (AF) in June and September. Substrate induced respiration was assessed by MicroResp short term incubation (5-hours) with 15 different substrate addition.



**Figure S3.** Mean substrate induced respiration (SIR) rates (± S.D., n = 3; µg CO2-C\*g soil-1\*h-1) of the soil samples after addition of the various carbon sources. Samples are bare spot (AL), Puccinellia sward (AP), Artemisia alkali steppe (AA) and Achillea alkali steppe (AF) in June and September. Substrate induced respiration was assessed by MicroResp short term incubation (5-hours) with 15 different substrate addition (25 µL/well, 6 replicate wells in each plate). Added substrates were D-galactose (Gal), trehalose (Tre), L-arabinose (Ara), D-glucose (Glc) and D-fructose (Fru) in 80 mg mL-1, citric acid (Cit), DL-malic acid (Mal), Na-succinate (Suc), L-alanine (Ala) and L-lysine (Lys) in 40 mg mL-1, L-glutamine (Gln) in 20 mg mL-1, and L-leucine (Leu), L-arginine (Arg) protocatechuic acid (Proc) and L-glutamic acid (Glu) in 12 mg mL-1.



**Figure S4.** Plot of the first two axis of residual variance (PCA) from the RDA model of the bacterial phylogenetic (NGS) and environmental data (CaCO3) with *ggplot2 package* v.3.3.0 (Wickham, 2016). Samples are bare spot (AL), Puccinellia sward (AP), Artemisia alkali steppe (AA) and Achillea alkali steppe (AF) in June and September sampling.

**Reference**

Wickham, H. *ggplot2: Elegant Graphics for Data Analysis.* Springer-Verlag, New York, USA, 2016. <https://ggplot2.tidyverse.org>.