

Appendix A

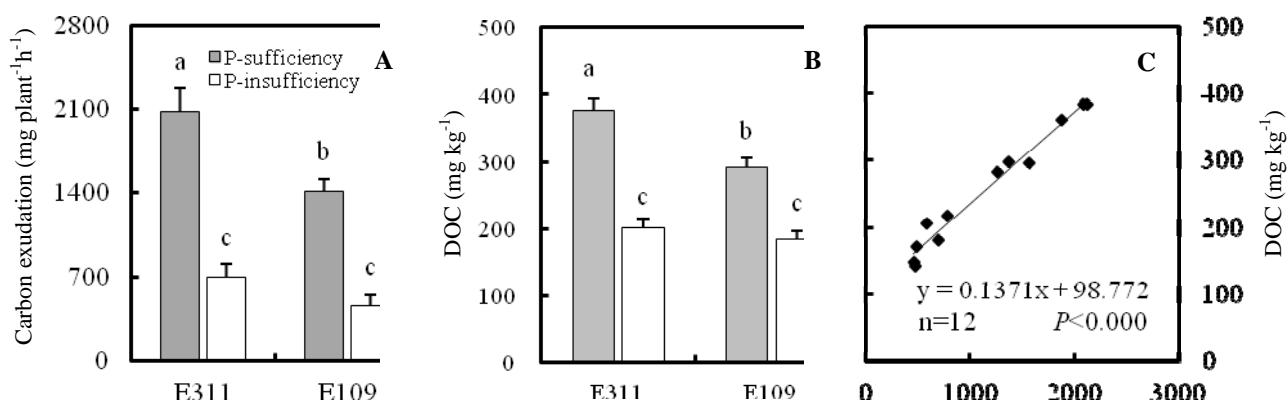
The root photosynthetic carbon exudation of E311 and E109 in low and high P solution condition ($\text{mg plant}^{-1} \text{h}^{-1}$)

E311		E109	
0.05 (P mM)	0.25 (P mM)	0.05 (P mM)	0.25 (P mM)
609 c	2077 a	560 c	1412 b

Plants were grown in a greenhouse from 10th May to 10th June in 2016 with an average temperature of 25/20 °C (day/night), relative humidity 75%, average daytime photosynthetically active radiation 800-1000 $\mu\text{mol m}^{-2}\text{s}^{-1}$ and photoperiod of 14h day/10h night. The management strategies, as experiment equipment, nutrient solution, and daily work same as our previous work (Zhou et al., 2016, in the reference of the text). Different letters in each horizontal column are significantly difference at the 5% level by LSD between the treatments.

Appendix B

Effects of soil P level on soybean root carbon (A) exudation, rhizosphere soil DOC (B) content and the relationship between A and B. DOC: Dissolved organic carbon. P-sufficient means of the value of soil Olsen-P was 10.2 mg kg^{-1} in the initial soil, P-insufficient means of the value of soil Olsen-P was 5.5 mg kg^{-1} in the initial soil. Data are averages of three replicates and bars represent standard errors. Data with different letters are significantly difference at the 5% level by LSD between two soil P levels and two soybean genotypes.



Appendix C

Redundancy analysis (RDA) plot of soil biochemical parameters in association with the two soybean genotypes at two soil P levels (A: Plot in P-sufficiency, B: Plot in P-insufficiency).

The data of DOC was used to generate PCA and OTU abundance was used to generate the RDA. Red Circularity, samples replicates of E311; blue triangle, samples replicates of E109. DOC: dissolved organic carbon.

