

# Silicon addition improves plant productivity and soil nutrient availability without changing the grass:legume ratio response to N fertilization

Danghui Xu<sup>1\*</sup>, Tianpeng Gao<sup>2,3</sup>, Xiangwen Fang<sup>1</sup>, Haiyan Bu<sup>1</sup>, Qiuxia Li<sup>1</sup>, Xiaona Wang<sup>1</sup>, Renyi Zhang<sup>1</sup>

<sup>1</sup>State Key Laboratory of Grassland Agro-ecosystems/School of Life Science, Lanzhou University, No. 222, South Tianshui Road, Lanzhou, Gansu 730000, China.

<sup>2</sup>College of Biological and Environmental Engineering, Xi'an University, Xi'an 710065, China.

<sup>3</sup>The Engineering Research Center of Mining Pollution Treatment and Ecological Restoration of Gansu

Province, Lanzhou City University, Lanzhou, 730070, China

\*Corresponding author email: [dhxu@lzu.edu.cn](mailto:dhxu@lzu.edu.cn)

Table SI. Soil organic C, total N concentration and pH under fertilization by N with Si and without Si.

	CK	Si40	N200	N200+Si40	N400	N400+Si40	N600	N600+Si40
Soil organic C ( $\text{g kg}^{-1}$ )	41.47a	41.21a	41.07a	42.24a	40.46a	41.83a	41.24a	41.29a
Total N concentration ( $\text{g kg}^{-1}$ )	3.56a	3.68a	3.61a	3.72a	3.69a	3.55a	3.79a	3.82a
pH	6.33a	6.34a	6.15b	6.16b	5.98c	6.01c	5.98c	6.03c