

Supplementary Material

Rapid stomatal response to fluctuating light: an under-explored mechanism to improve drought tolerance in rice

Mingnan Qu^A, Saber Hamdani^A, Wenzhen Li^C, Shimei Wang^B, Jiuyou Tang^C, Zhuo Chen^C, Qingfeng Song^A, Ming Li^A, Honglong Zhao^A, Tiangen Chang^A, Chengcai Chu^C and Xinguang Zhu^{A,D}

^ACAS-Key Laboratory for Computational Biology, CAS-MPG Partner Institute for Computational Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Room 106, Physiology Building, 320 Yueyang Road, Shanghai 200031, China.

^BAnhui Agricultural Academy of Sciences, 40 Nongke South Road, Hefei, Anhui 230031, China.

^CThe State Key Laboratory of Plant Genomics, Institute of Genetics and Developmental Biology, 1 Beichen South road, Chinese Academy of Sciences, Beijing 100101, China.

^DCorresponding author. Email: zhuxinguang@picb.ac.cn

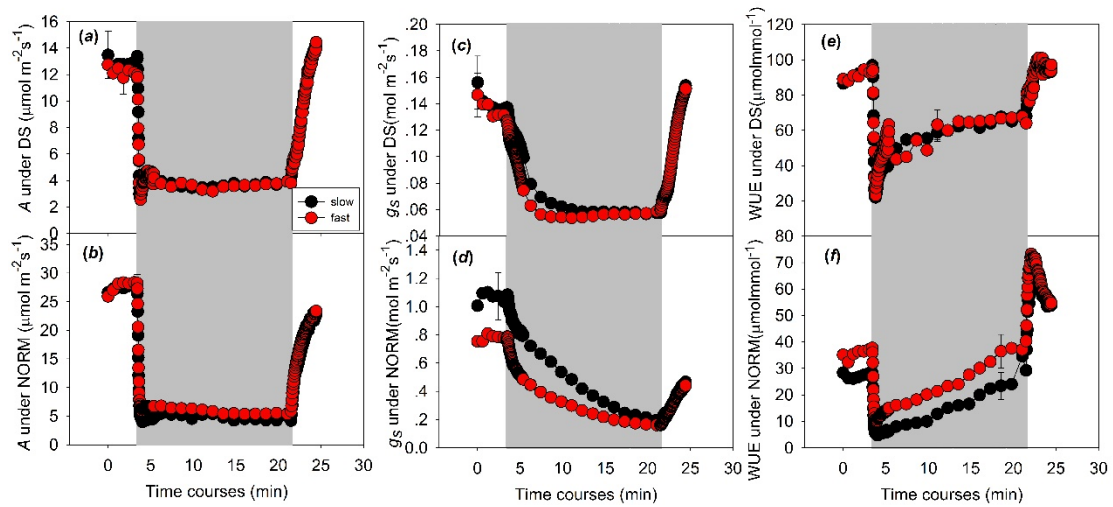


Fig. S1. Dynamic changes in photosynthesis (*a*, *b*), stomatal conductance (*c*, *d*) and water use efficiency (*e*, *f*) during fluctuating light under drought stress and normal condition. Error bar represents the maximum standard error for each group. Closed circles in red and black were depicted as τ_{cl} in fast and slow group, respectively.

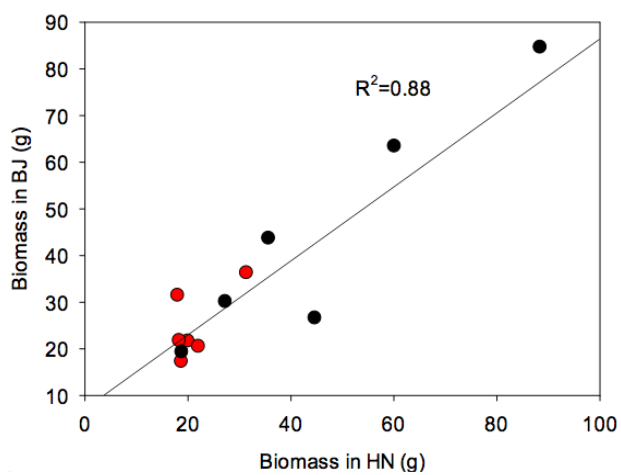


Fig. S2. Correlation of biomass between Beijing and Hainan. Closed circles in red and black were depicted as τ_{cl} in fast and slow group, respectively. Determination of coefficient is depicted as R^2 .

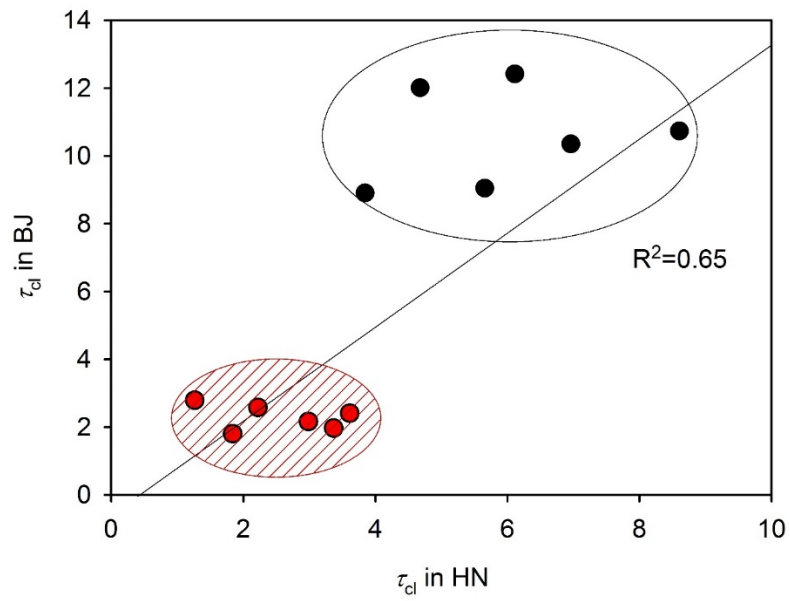


Fig. S3. Comparison on τ_{cl} under Hainan (HN) in 2014 and Beijing (BJ) in 2013 experiments. Closed circles in red and black were depicted as τ_{cl} in fast and slow group, respectively. Two clusters were separated clearly. Determination of coefficient is depicted as R^2 .

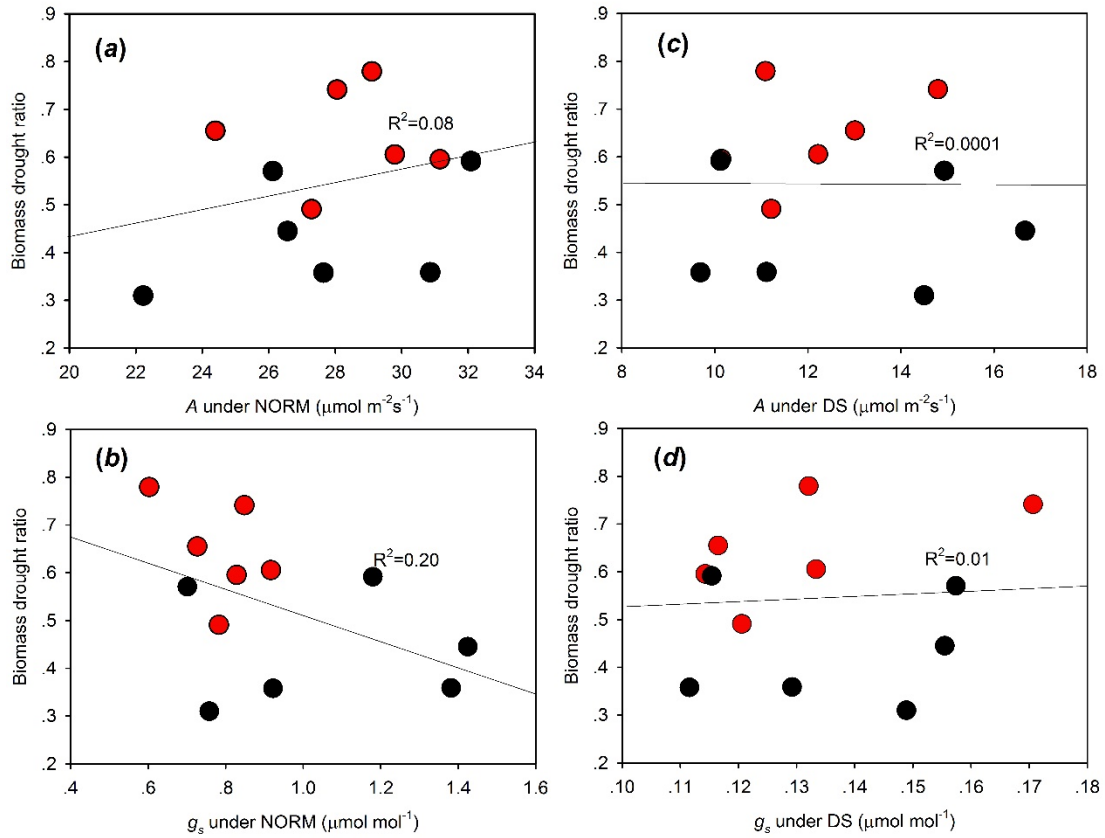


Fig. S4. Comparison of carbon assimilation (*a*, *c*) and stomatal conductance (*b*, *d*) with biomass drought ratio across subset accessions under drought stress and normal condition. Closed circle in red and black were depicted as τ_{cl} in fast and slow group, respectively. Determination of coefficient is depicted as R^2 .

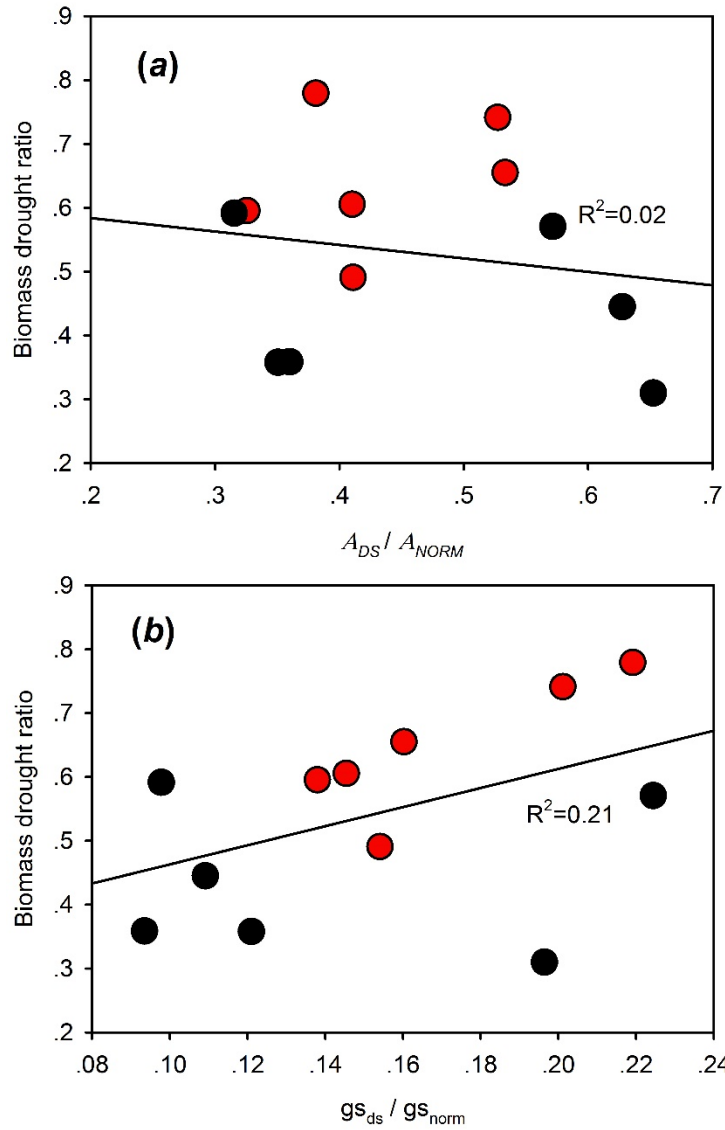


Fig. S5. Correlation of biomass drought ratio with A_{DS}/A_{NORM} and gS_{ds}/gS_{norm} . Closed circles in red and black were depicted as τ_{c1} in fast and slow group, respectively. Determination of coefficient is depicted as R^2 .

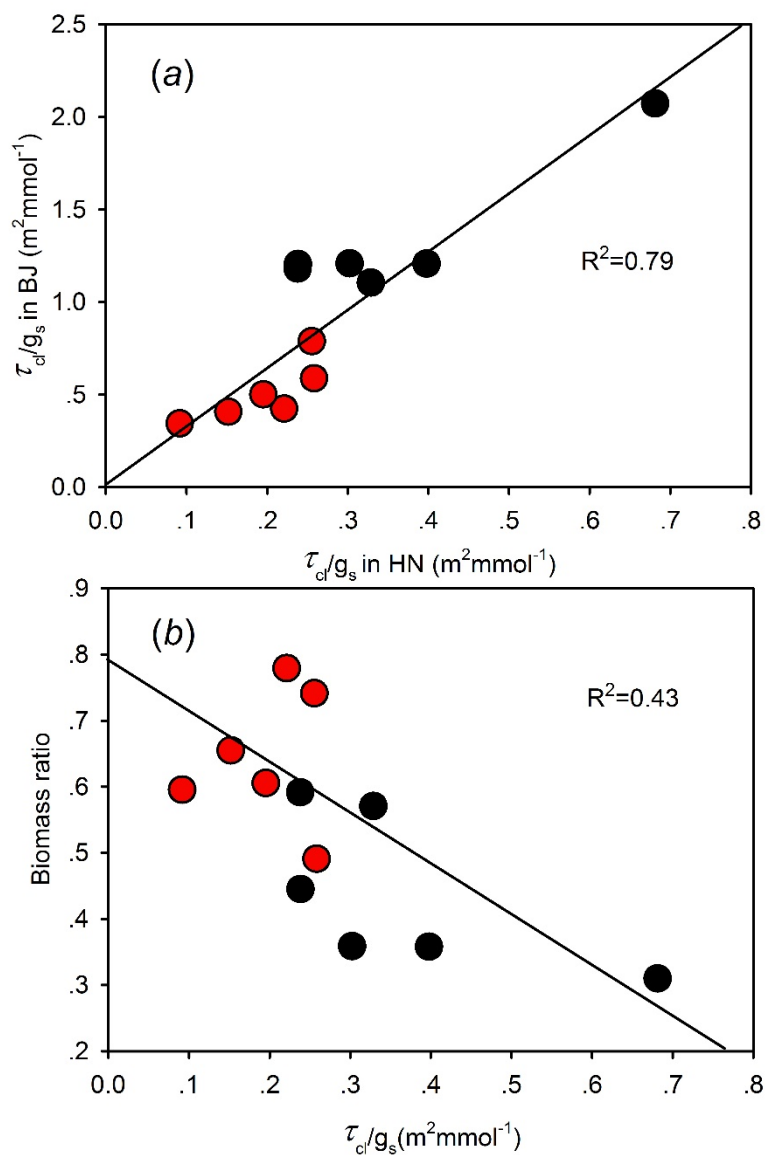


Fig. S6. Correlation between τ_{cl}/g_s under HN and BJ (a) and Correlation between τ_{cl}/g_s and biomass ratio (b). Closed circle in red and black were depicted as τ_{cl} in fast and slow group, respectively. Determination of coefficient is depicted as R^2 .