**Supplementary Figures**

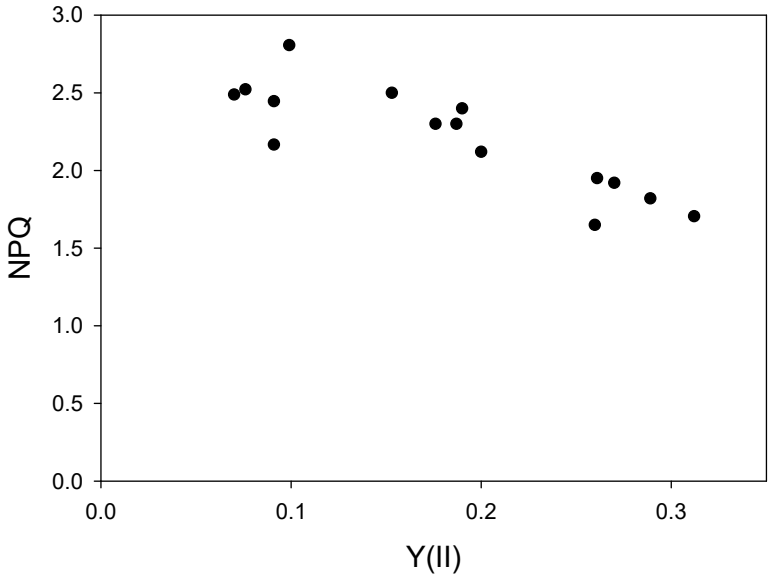


**Figure S1.** The relationship between the non-photochemical quenching of chlorophyll fluorescence (NPQ) and the apparent quantum yield of PSII (Y[II]) in wheat leaves. Both NPQ and Y(II) were measured simultaneously. Data points represent the averages of five plants. A reduction in $pCO_2$ lowered Y(II). Steady states for measurements at various $pCO_2$ were confirmed by the achievement of stable Y(II).

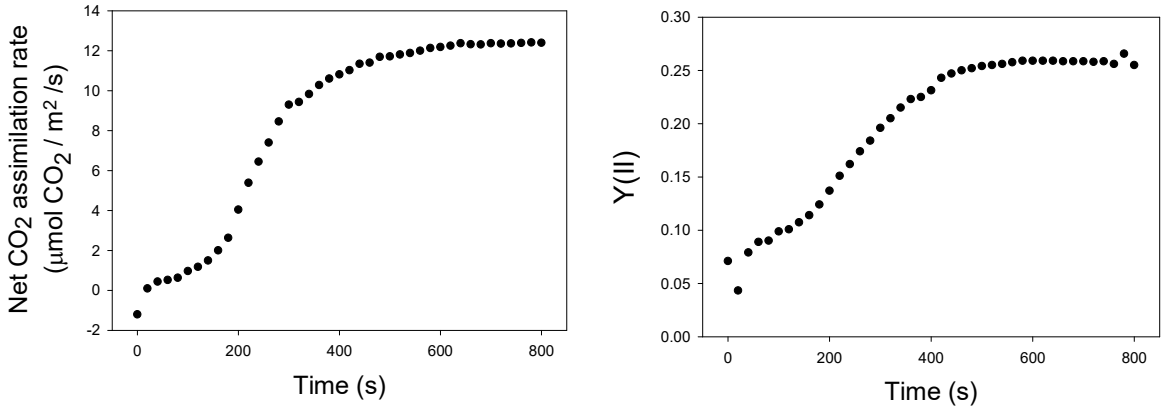


**Figure S2.** The responses of the net $CO_2$ assimilation rate and Y(II) to illumination by actinic light in wheat leaves. The net $CO_2$ assimilation rate (left panel) and Y(II) (right panel) were measured simultaneously at 25 °C leaf temperature, 40 Pa $pCO_2$, 21 kPa $pO_2$, and 1000 mol photons$^{-1}$ m$^{-2}$ s$^{-1}$ light intensity. The actinic light was turned on at 0 s.