

Table S1: Physical and chemical properties of the soil

Year/ Location	pH	Organic matter (g kg⁻¹)	Total N content (g kg⁻¹)	Total P content (g kg⁻¹)	Total K content (g kg⁻¹)	Available N content (mg kg⁻¹)	Available P content (mg kg⁻¹)	Available K content (mg kg⁻¹)
LONGHUI	5.64	50.69	2.59	0.78	27.28	384.56	1.53	304.5
YONGSHENG	7.05	28.332	1.219	1.776	6.015	220.98	1.126	285.5

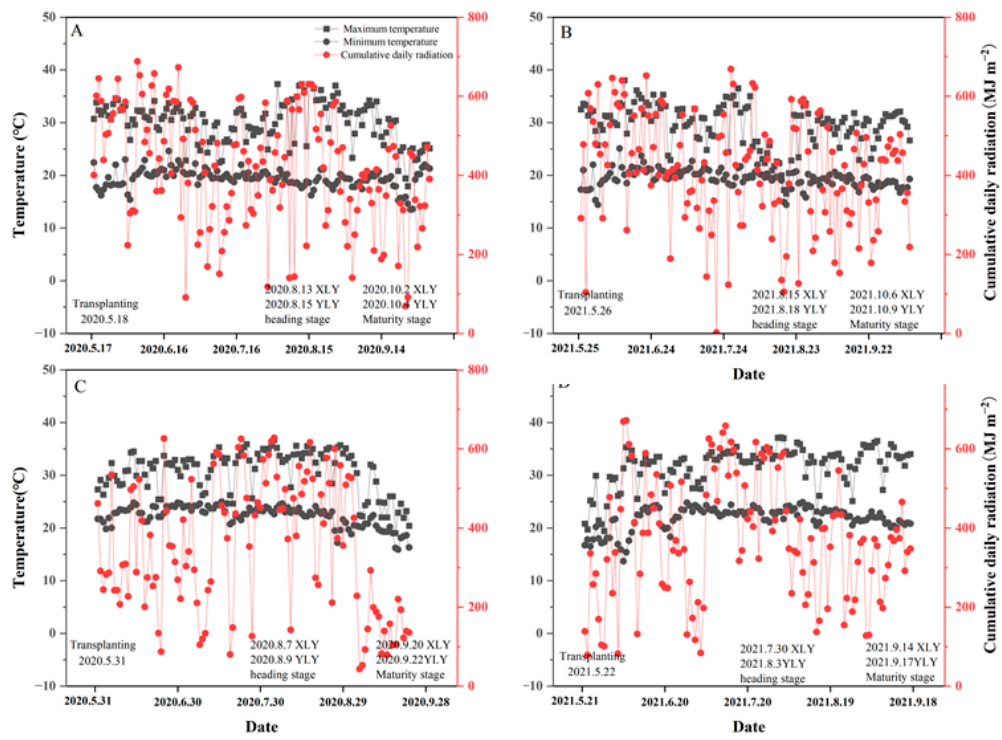


Figure S1. Maximum temperature, minimum temperature, and solar radiation from transplantation to maturity in 2020 and 2021 in YONGSHENG (A and B) and LONGHUI (C and D), China. XLY-900, Xiangliangyou900, YLY-900, Yliangyou900.

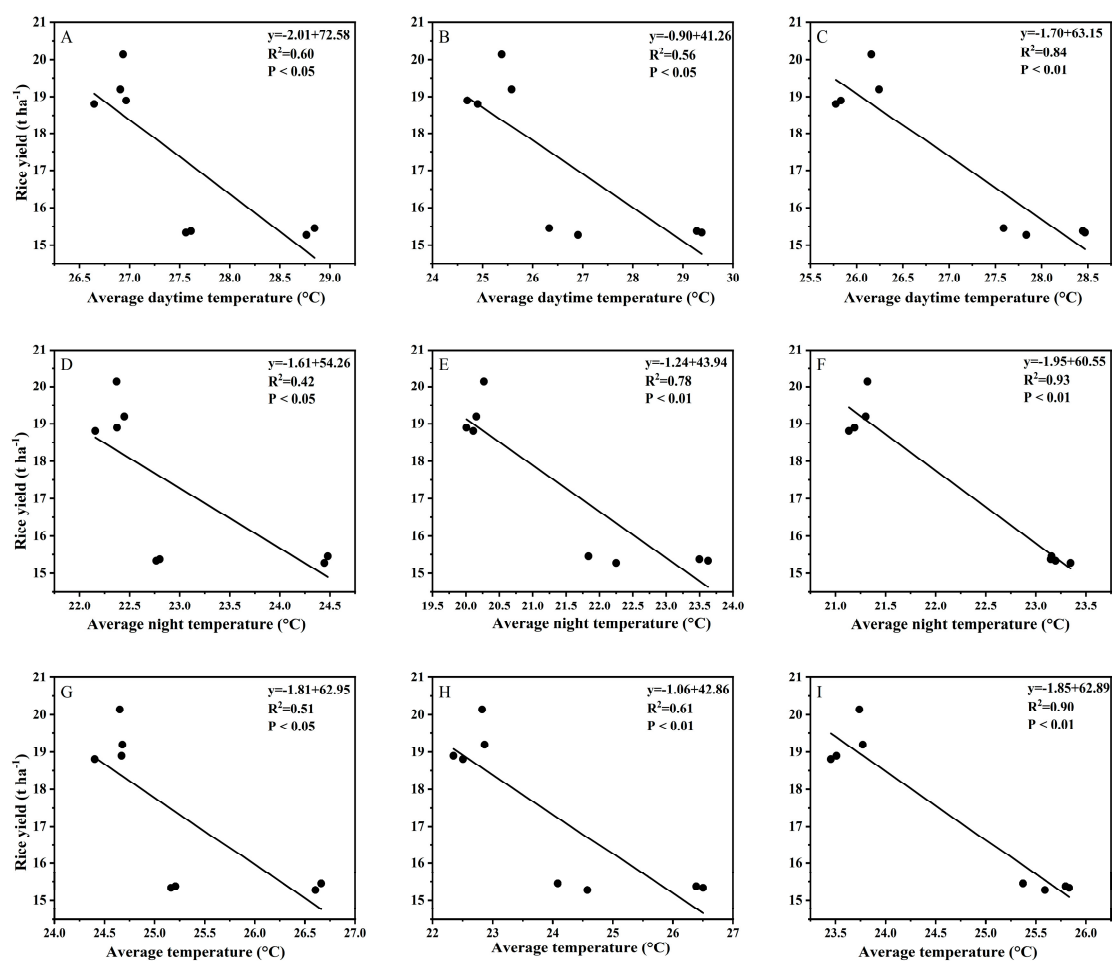


Figure S2. Relationships of grain yield with average daytime temperature, average night temperature, average temperature from transplanting to heading (A, D, and G), from heading to maturity (B, E, and H), and from transplanting to maturity (C, F, and I).

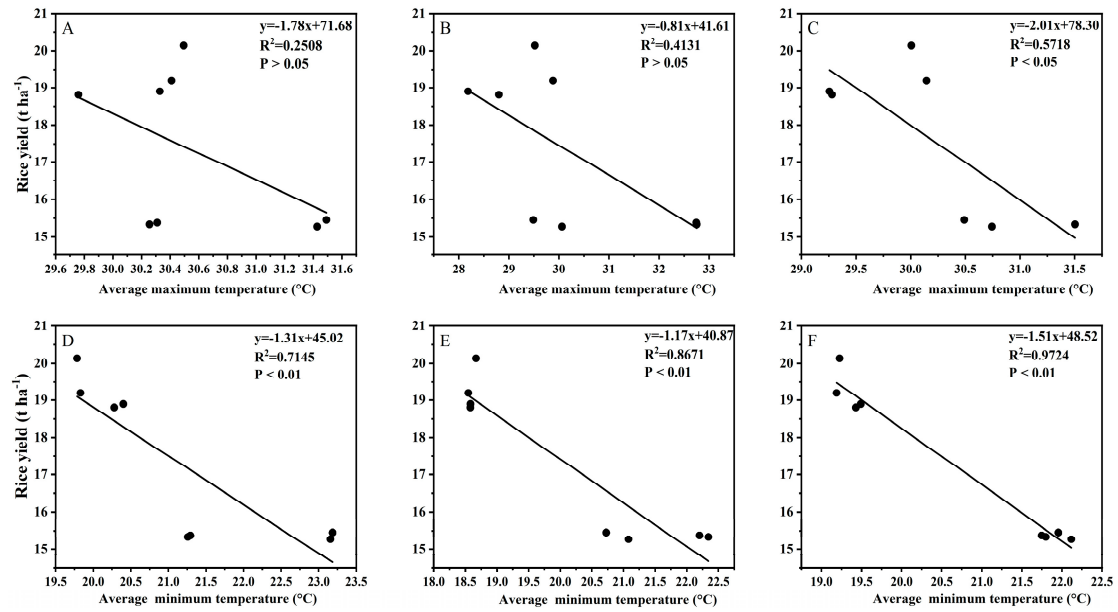


Figure S3. Relationships of grain yield with the average maximum temperature and average minimum temperature from transplanting to heading (A and D), from heading to maturity (B and E), and from transplanting to maturity (C and F).

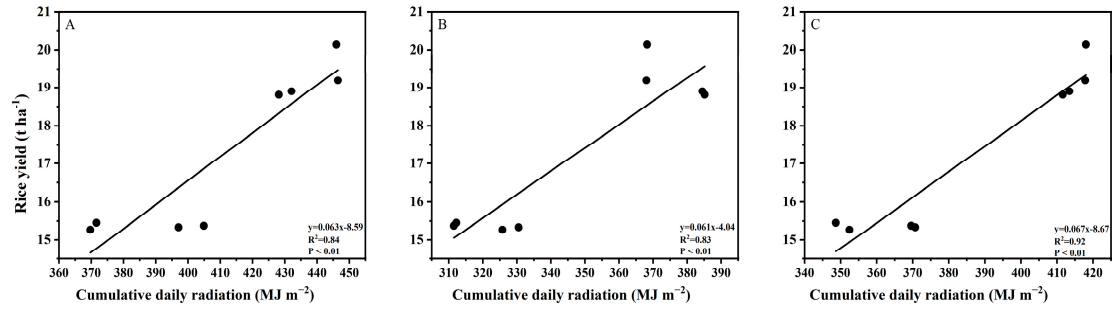


Figure S4. Relationships of grain yield with accumulative solar radiation from transplanting to heading (A), from heading to maturity (B), and from transplanting to maturity (C).