PB-26

Transcript Analysis of Wheat under High Temperature during Early Grain-filling-period

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Heat stress is a major abiotic stress that limits wheat production worldwide. Wheat is frequently exposed to high temperature during anthesis and ripening period, which resulted in yield loss and detrimental end use quality. In this study, plants were subjected to high temperature stress (34℃/31℃, day/night) for 5 days at DAF(Days after flowering)8 ~ DAF12. After treatment, plants were exposed to optimal conditions for recovery 3 days at DAF12 ~ DAF15. RNA-seq analysis in whole spike was conducted to study the effect of heat stress on wheat transcriptome changes during early grain filling period. 46 differentially expressed genes (DEGs) were responsed significant levels of up-regulation and down-regulation during the treatment and recovery periods. Each expression mode of genes varified by qRT-PCR indicating that high temperature during grain filling periods affect severly. Here, we revealed transcriptome analysis under heat stress in the dehulled spikelets of wheat during the early stage of its grain filling period.

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