



Figure S1. Environmental temperature during stress treatments. Blue colour represents temperature under control and salt stress. Orange colour represents the temperature under heat stress and the combined heat and salt stress. The x-axis shows the 8 d duration of the stress treatment from 24 June 2023 to 2 July 2023.

Table S1. Information on key genes in photosynthesis, ROS and Rubisco pathways in response to combined heat and salt stresses

| Gene ID | Gene Name | Description |
|------------------|---------------|---|
| Solyc08g013670.3 | <i>psaN</i> | Photosystem I reaction centre subunit N |
| Solyc02g070990.1 | <i>LHCB1</i> | Chlorophyll A-B binding protein |
| Solyc02g065400.3 | <i>psbo</i> | 33kDa precursor protein of oxygen-evolving complex |
| Solyc09g007270.3 | <i>APX2</i> | L-ascorbate peroxidase 2, cytosolic |
| Solyc01g067740.3 | <i>SODCC1</i> | Cu ²⁺ /Zn ²⁺ Superoxide dismutase 1, cytosolic, chloroplastic |
| Solyc06g005160.3 | <i>APX1</i> | cytosolic ascorbate peroxidase 1 |
| Solyc03g034220.3 | <i>rbcS2A</i> | ribulose biphosphate carboxylase small chain 2A |
| Solyc02g085950.3 | <i>RbcS3B</i> | ribulose biphosphate carboxylase small chain 3B |

Table S2. qRT-PCR primer sequence information

| Gene | Forward Primer Sequence (5'-3') | Reverse Primer Sequence (5'-3') |
|--------------------------|---------------------------------|---------------------------------|
| Solyc08g013670.3 | TGGCTACAAGTGGTGCGAAT | GTCCTTGCCTTCACACTCCA |
| Solyc02g070990.1 | TCTTCCCCTTCTTTTGTGGG | TCACCAGAGAATGGGCCTAAG |
| Solyc02g065400.3 | CCATTGAAGGAGGTGTTGGC | TGATGTGGGCTCTAGGCAGA |
| Solyc09g007270.3 | TCCGCCCTCTAGTCGAGAAA | CAGCATCTGCAAATCCGAGC |
| Solyc01g067740.3 | TCTCACTGGTCCACAGTCCA | CCAGCATTTCCGGTGCTTTT |
| Solyc06g005160.3 | CATACCTTGGGAAGGGCACA | TTCCCCACTCAAAAGCTCCG |
| Solyc03g034220.3 | TCCTGATTTGTCTGACGAGCAA | CTTGAACCTCAGCCAACACTTG |
| Solyc02g085950.3 | TGCTCAGCGAAATTGAGTACCT | GGTCCAGTATCTGCCATCGTAG |
| <i>Actin</i> (reference) | CTCTACATACTTGAGAGGTGCC | AGACGAGGAGAAAACATCACAA |