## Supplementary Table S1.

Effects of LED inter-lighting on leaf photosynthetic capacity of single-truss tomato plants. Light-response curve was measured from 10:00 to 14:00 in representative leaves in three canopy layers in plants grown under shading during 0%, 40% and 60% of days with or without LED inter-lighting. Data are means ± SEM (n = 5). Different letters indicated significant difference within the column (Tukey’s HSD test, \( P < 0.05 \)).

|                | (A) Top Canopy | (B) Mid Canopy | (A) Lower Canopy |
|----------------|---------------|----------------|-----------------|
|                | Control | 40% Shade & LED | Control | 40% Shade & LED | Control | 40% Shade & LED |
| 0              | -1.33 ± 0.18a | -1.15 ± 0.19a | -0.98 ± 0.11a | -0.98 ± 0.11a | -1.19 ± 0.18a | -0.62 ± 0.21a |
| 50             | 2.18 ± 0.11a | 2.21 ± 0.19a | 2.11 ± 0.09a | 2.19 ± 0.13a | 1.96 ± 0.15a | 1.80 ± 0.11a |
| 100            | 4.69 ± 0.09a | 4.25 ± 0.07a | 4.29 ± 0.12a | 3.90 ± 0.18a | 3.70 ± 0.21a | 3.54 ± 0.12a |
| 200            | 10.29 ± 0.25a | 9.19 ± 0.16a | 9.01 ± 0.35a | 7.41 ± 0.38a | 6.73 ± 0.55a | 7.31 ± 0.26a |
| 400            | 12.51 ± 0.31a | 10.96 ± 0.28a | 10.92 ± 0.45a | 8.43 ± 0.41a | 7.69 ± 0.57a | 8.84 ± 0.29a |
| 600            | 13.79 ± 0.37a | 11.67 ± 0.34a | 12.01 ± 0.63a | 9.10 ± 0.41a | 8.18 ± 0.67a | 9.66 ± 0.37a |
| 900            | 14.35 ± 0.31a | 12.25 ± 0.38b | 12.69 ± 0.72a | 9.34 ± 0.44b | 8.40 ± 0.69b | 10.32 ± 0.40a |
| 1000           | 14.81 ± 0.36a | 12.59 ± 0.41a | 13.13 ± 0.81a | 9.61 ± 0.45ab | 8.43 ± 0.62ab | 10.78 ± 0.45a |
| 1300           | 15.07 ± 0.33a | 12.78 ± 0.50a | 13.44 ± 0.84a | 9.79 ± 0.54ab | 8.64 ± 0.61b | 11.02 ± 0.49a |
| 1500           | 15.35 ± 0.33a | 13.04 ± 0.55a | 13.71 ± 0.93a | 10.10 ± 0.74ab | 8.63 ± 0.61b | 11.06 ± 0.50a |
|                | Control | 60% Shade | 60% Shade & LED | Control | 60% Shade | 60% Shade & LED | Control | 60% Shade | 60% Shade & LED |
| 0              | -1.33 ± 0.18a | -1.27 ± 0.10a | -0.76 ± 0.15a | -0.60 ± 0.22a | -0.83 ± 0.13a | -0.62 ± 0.21a | -0.31 ± 0.06a | -1.07 ± 0.15a |
| 50             | 2.18 ± 0.11a | 2.01 ± 0.16a | 1.96 ± 0.15a | 1.74 ± 0.11a | 2.22 ± 0.19a | 1.75 ± 0.11a | 1.46 ± 0.13a | 1.89 ± 0.23a |
| 100            | 4.69 ± 0.09a | 4.33 ± 0.22a | 3.90 ± 0.18a | 3.05 ± 0.08b | 4.43 ± 0.29a | 3.14 ± 0.23a | 2.48 ± 0.24a | 3.38 ± 0.32a |
| 200            | 10.29 ± 0.25a | 9.19 ± 0.57a | 7.41 ± 0.38b | 5.63 ± 0.17c | 9.01 ± 0.52a | 5.74 ± 0.51ab | 4.01 ± 0.32b | 6.68 ± 0.69a |
| 400            | 12.51 ± 0.31a | 11.15 ± 0.59a | 8.43 ± 0.41b | 6.61 ± 0.29c | 10.71 ± 0.56a | 6.57 ± 0.57a | 4.20 ± 0.29b | 8.04 ± 0.71a |
| 600            | 13.79 ± 0.37a | 11.65 ± 0.51b | 9.10 ± 0.41b | 7.15 ± 0.39b | 11.51 ± 0.54a | 6.92 ± 0.68a | 4.44 ± 0.33b | 8.73 ± 0.66a |
| 900            | 14.35 ± 0.31a | 12.17 ± 0.56b | 9.34 ± 0.44b | 7.41 ± 0.42b | 12.01 ± 0.64a | 7.14 ± 0.75a | 4.49 ± 0.35b | 9.06 ± 0.75a |
| 1000           | 14.81 ± 0.36a | 12.52 ± 0.62a | 9.61 ± 0.45b | 7.51 ± 0.39c | 12.17 ± 0.58a | 7.36 ± 0.74a | 4.59 ± 0.27b | 9.32 ± 0.68a |
| 1300           | 15.07 ± 0.33a | 12.81 ± 0.61a | 9.79 ± 0.54b | 7.55 ± 0.45c | 12.32 ± 0.53a | 7.36 ± 0.82a | 4.63 ± 0.34b | 9.45 ± 0.67a |
| 1500           | 15.35 ± 0.33a | 13.01 ± 0.67a | 13.28 ± 0.56a | 10.10 ± 0.74a | 7.67 ± 0.42c | 12.35 ± 0.54a | 7.37 ± 0.73a | 4.71 ± 0.31b | 9.40 ± 0.71a |

Supplemental LED inter-lighting compensates for a shortage of light for plant growth and yield under the lack of sunshine

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