

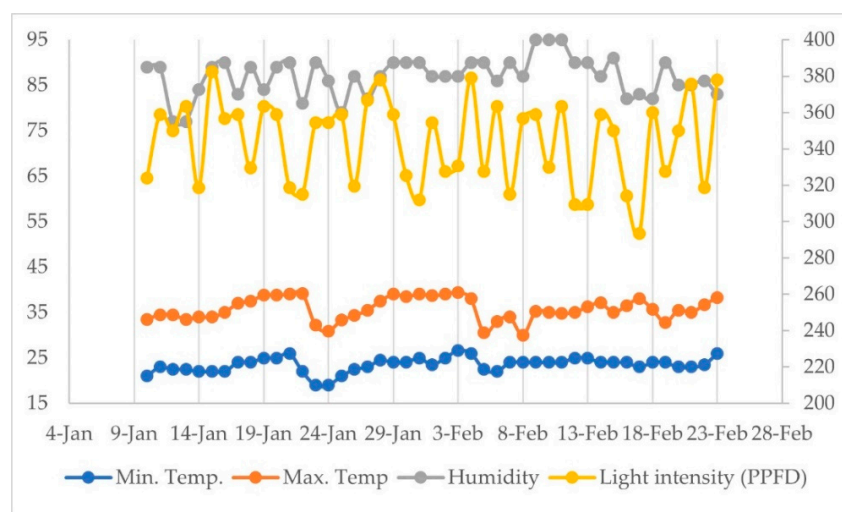
Table S1. Chemical names of materials used to prepare nutrient solutions.

Chemical name	Nutrient solution formulations (mg/L)			
	Enshi [35]	Hogland and Arnon [36]	Resh Tropical Dry Summer [37]	Cooper [38]
Ca(NO ₃) ₂	475.0	656.0	1,475.94	100.3
Fe-EDTA	23.6	2.2	23.6	79.0
KNO ₃	405.0	606.0	230.53	583.0
KH ₂ PO ₄	-	-	10.89	263.0
NH ₄ H ₂ PO ₄	77.5	345.0	188.65	-
MgSO ₄ ·4H ₂ O	250.0	490.0	369.72	513.0
MnSO ₄ ·4H ₂ O	1.538	-	1.54	6.1
ZnSO ₄ ·7H ₂ O	0.22	0.22	0.22	4.4
CuSO ₄ ·5H ₂ O	0.08	0.08	0.08	3.9
MnCl ₂ ·4H ₂ O	-	1.81	-	-
H ₂ MoO ₄ ·2H ₂ O	-	0.09	-	-
(NH ₄) ₂ MoO ₇ ·4H ₂ O	-	-	0.017	3.7
H ₃ BO ₃	2.86	2.86	2.86	1.7
Na ₂ SO ₄	-	-	162.65	-
K ₂ SO ₄	-	-	241.36	-
EC (mS/cm)	1.2-1.5	2.5-2.8	2.0-2.5	2.5-2.8

Table S2. Combinations of light emitting diodes and photosynthetic photon flux densities (PPFD).

Total PPFD (μmol/m ² /s)	Blue (445 nm)	Red (638 nm)	Red (665 nm)	Far-red (735 nm)
330	25	136	166	3
220	17	90	11	2
110	9	45	55	1

Note: Based on Tamulaitis et al. (2005) and Samuoliene et al. (2013).

**Figure S1.** Ambient temperature, humidity, and light intensity of the greenhouse during the cultivation period.