Effect on bayberry cultivars (*Myrica rubra Sieb.* et *Zucc.*)

The net impact of combined stress on the plant

Stress 1: High light (1500 µmol m^{-2} s^{-1})
Stress 2: Heat (40°C)
Stage of plant: Whole mature chamber grown plant

The table shows the impact of combined stress on the photochemical efficiency, quantum yield of PSII, photochemical and non-photochemical quenching of bayberry plants

Cultivar	Treatment	Response under combined stress (Type B parameters*)			
		Maximum photochemical efficiency (Fv/Fm) (%)	**Effective quantum yield of PSII (%)**	**Coefficient of photochemical quenching (qP) (%)**	**Coefficient of Non-photochemical quenching (NPQ) (%)**
Dongkui	High light (1500 µmol m^{-2} s^{-1}) + High temperature (40°C) for 3h (Simultaneous stress)	0.584	0.177	0.360	0.781
	High light (1500 µmol m^{-2} s^{-1}) + Temperature 25°C) for 3h (Simultaneous stress)	0.735	0.315	0.607	1.755
	Low light (500 µmol m^{-2} s^{-1}) + High temperature (40°C) for 3h (Simultaneous stress)	0.660	0.211	0.465	1.240
	Low light (500 µmol m^{-2} s^{-1}) + Temperature (25°C) for 3h (Simultaneous stress)	0.776	0.357	0.671	1.444

Tanmei	High light (1500 µmol m^{-2} s^{-1}) + High temperature (40°C) for 3h (Simultaneous stress)	0.471	0.122	0.319	0.679
	High light (1500 µmol m^{-2} s^{-1}) + Temperature 25°C) for 3h (Simultaneous stress)	0.742	0.307	0.614	1.678
	Low light (500 µmol m^{-2} s^{-1}) + High temperature (40°C) for 3h (Simultaneous stress)	0.6	0.189	0.418	1.002
	Low light (500 µmol m^{-2} s^{-1}) + Temperature (25°C) for 3h (Simultaneous stress)	0.755	0.348	0.653	1.387

For raw data – Click here (.xlsx file)

Reference– Gao Y-b, Zheng W-w, Zhang C, Zhang L-l, Xu K (2019) High temperature and high light intensity induced photoinhibition of bayberry (*Myrica rubra Sieb*. et *Zucc*.) by disruption of D1 turnover in photosystem II. Scientia Horticulturae **248:** 132-137

Note: *Values are presented as it is from the source article without subjecting to the calculation.*

'*'- *For more information on parameters classification, please refer to 'methodology' tab*

The inference from the study: Gao et al. 2019 studied the combined effect of high light and high temperature on two bayberry cultivars Dongkui and Tanmei. Although, the combined high light and high temperature decreased the values of photochemical efficiency, effective quantum yield of photosystem II, photochemical quenching and increased the non-photochemical quenching in comparison with values of these parameters at high light with optimum temperature, and low light with high and optimum temperature for both the cultivars. **But,**

physiological changes implied that the cv. Dongkui was more resistant that cv. Tanmei to combined high light and high temperature.