

**Effect on arched elegant rock cress species (*Boecheera*)**

**The net impact of combined stress on the plant**

Stress 1: High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ )  
Stress 2: Heat (22, 38, 41, 43, 45°C)

The table shows the impact of combined stress on the chlorophyll fluorescence of arched elegant rock cress plants

Species	Treatment	Response under combined stress (Type B parameters*)
	Impact of basal combined high light and high heat stress	Chlorophyll fluorescence
<i>Boecheera arcuata</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.531
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.754
	Untreated	0.741
<i>Boecheera californica</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.543
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.725
	Untreated	0.749
<i>Boecheera depauperata</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.645
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.766
	Untreated	0.713
<i>Boecheera johnstonii</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.502
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.752
	Untreated	0.722
<i>Boecheera perennans</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.433
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $22^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.752
	Untreated	0.672



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<i>Boechera arcuata</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.461
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.731
	Untreated	0.742
<i>Boechera californica</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.445
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.717
	Untreated	0.752
<i>Boechera depauperata</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.332
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.737
	Untreated	0.716
<i>Boechera johnstonii</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.321
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.735
	Untreated	0.729
<i>Boechera perennans</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.263
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.697
	Untreated	0.676
<i>Boechera arcuata</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.194
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.265
	Untreated	0.736
<i>Boechera californica</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.277
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.454
	Untreated	0.749



<i>Boechera depauperata</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.19
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.442
	Untreated	0.711
<i>Boechera johnstonii</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.122
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.238
	Untreated	0.727
<i>Boechera perennans</i>	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) for 3 hrs	0.170
	High light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $43^\circ\text{C}$ ) (Simultaneous stress) + recovery for 5 days	0.172
	Untreated	0.677
<b>Impact of heat pre-treatment of <math>38^\circ\text{C}</math> followed by combined heat and high light treatments</b>		
<i>Boechera arcuata</i>	Heat ( $38^\circ\text{C}$ ) for 1 hrs + [Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $41^\circ\text{C}$ ) for 3 hrs] (Simultaneous stress)	0.223
	Heat ( $38^\circ\text{C}$ ) for 1 hrs + [Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $41^\circ\text{C}$ ) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.658
	Untreated	0.740
<i>Boechera californica</i>	Heat ( $38^\circ\text{C}$ ) for 1 hrs + [Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $41^\circ\text{C}$ ) for 3 hrs] (Simultaneous stress)	0.219
	Heat ( $38^\circ\text{C}$ ) for 1 hrs + [Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $41^\circ\text{C}$ ) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.594
	Untreated	0.748
<i>Boechera depauperata</i>	Heat ( $38^\circ\text{C}$ ) for 1 hrs + [Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $41^\circ\text{C}$ ) for 3 hrs] (Simultaneous stress)	0.265
	Heat ( $38^\circ\text{C}$ ) for 1 hrs + [Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $41^\circ\text{C}$ ) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.714
	Untreated	0.710



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<i>Boechera johnstonii</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (41°C) for 3 hrs] (Simultaneous stress)	0.158
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (41°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.538
	Untreated	0.725
<i>Boechera perennans</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (41°C) for 3 hrs] (Simultaneous stress)	0.153
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (41°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.627
	Untreated	0.674
<i>Boechera arcuata</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress)	0.196
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.418
	Untreated	0.741
<i>Boechera californica</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress)	0.115
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.356
	Untreated	0.747
<i>Boechera depauperata</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress)	0.198
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.608
	Untreated	0.714
<i>Boechera johnstonii</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress)	0.126



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	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.309
	Untreated	0.729
<i>Boechera perennans</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress)	0.0588
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (43°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.290
	Untreated	0.675
<i>Boechera arcuata</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress)	0.136
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.338
	Untreated	0.739
<i>Boechera californica</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress)	0.136
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.173
	Untreated	0.750
<i>Boechera depauperata</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress)	0.164
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.394
	Untreated	0.713
<i>Boechera johnstonii</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress)	0.150



	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.248
	Untreated	0.728
<i>Boechera perennans</i>	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress)	0.109
	Heat (38°C) for 1 hrs + [Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (45°C) for 3 hrs] (Simultaneous stress) + recovery for 5 days	0.201
	Untreated	0.675
<b>Impact of a combined pre-treatment of 38°C and high light followed by combined heat and high light</b>		
<i>Boechera arcuata</i>	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (41°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.568
	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (41°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.750
	Untreated	0.738
<i>Boechera californica</i>	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (41°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.468
	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (41°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.694
	Untreated	0.750
<i>Boechera depauperata</i>	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (41°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.513



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	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $41^\circ\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.707
	Untreated	0.712
<i>Boechera johnstonii</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $41^\circ\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.502
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $41^\circ\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.719
	Untreated	0.729
<i>Boechera perennans</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $41^\circ\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.345
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $41^\circ\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.670
	Untreated	0.677
<i>Boechera arcuata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $43^\circ\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.334
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $43^\circ\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.561
	Untreated	0.740
<i>Boechera californica</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^\circ\text{C}$ ) for 1 hrs + combined heat ( $43^\circ\text{C}$ ) + high light	0.285



	(1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	
	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (43°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.655
	Untreated	0.749
<i>Boechera depauperata</i>	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (43°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.382
	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (43°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.657
	Untreated	0.712
<i>Boechera johnstonii</i>	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (43°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.164
	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (43°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.355
	Untreated	0.728
<i>Boechera perennans</i>	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (43°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.264
	Combined high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat (38°C) for 1 hrs + combined heat (43°C) + high light (1200 $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.420
	Untreated	0.674





<i>Boechera arcuata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.114
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.086
	Untreated	0.739
<i>Boechera californica</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.100
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.068
	Untreated	0.746
<i>Boechera depauperata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.258
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.577
	Untreated	0.713
<i>Boechera johnstonii</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.125
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.075



	Untreated	0.724
<i>Boechera perennans</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress)	0.060
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + combined heat ( $45^{\circ}\text{C}$ ) + high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.046
	Untreated	0.670
<b>Impact of a combined pre-treatment of <math>38^{\circ}\text{C}</math> and high light followed by a heat only treatment</b>		
<i>Boechera arcuata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.286
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.677
	Untreated	0.740
<i>Boechera californica</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.229
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.592
	Untreated	0.749
<i>Boechera depauperata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.223
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.727
	Untreated	0.714
<i>Boechera johnstonii</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.157
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.510



## Stress Combination and their Interactions in Plants (SCIP) Database

Website link- <http://www.nipgr.ac.in/scipdb.php>

	Untreated	0.730
<i>Boechera perennans</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.188
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $41^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.680
	Untreated	0.677
<i>Boechera arcuata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.199
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.505
	Untreated	0.739
<i>Boechera californica</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.161
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.335
	Untreated	0.749
<i>Boechera depauperata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.154
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.379
	Untreated	0.714
<i>Boechera johnstonii</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.139
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.256
	Untreated	0.727
<i>Boechera perennans</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.104



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	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $43^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.328
	Untreated	0.676
<i>Boechera arcuata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.123
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.171
	Untreated	0.739
<i>Boechera californica</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.171
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.126
	Untreated	0.749
<i>Boechera depauperata</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.184
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.387
	Untreated	0.711
<i>Boechera johnstonii</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.158
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.092
	Untreated	0.726
<i>Boechera perennans</i>	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress)	0.104
	Combined high light ( $1200 \mu\text{mol m}^{-2} \text{s}^{-1}$ ) + Heat ( $38^{\circ}\text{C}$ ) for 1 hrs + Heat ( $45^{\circ}\text{C}$ ) for 3 hrs (Simultaneous stress) + recovery for 5 days	0.142
	Untreated	0.673



For raw data – Click here (.xlsx file)

Reference– Gallas G, Waters ER (2015) *Boechera* species exhibit species-specific responses to combined heat and high light stress. PLoS One 10: e0129041

**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:** Gallas and Waters studied the effect of combined heat and high light on arched elegant rock cress (*Boechera*) plants species. The results showed that the combined heat and high light treatment reduced the chlorophyll fluorescence in comparison with the plants grown at optimal condition in all the *Boechera* species. However, the chlorophyll fluorescence values showed a variation in *Boechera* species tolerance to combined heat and high light stress. **Of all the species, *Boechera depauperata* showed a less leaf damage to basal treatments and more protection on acquired stress treatments.**