

Effect on thalecress cultivars (*Arabidopsis thaliana* cv. Col-0 & Ler)

The net impact of individual and combined stress on plant growth

The table shows the effect of salt and heat stress alone and in combination on growth of two thalecress cultivars Col-0 and Ler

Crop: thalecress (*Arabidopsis thaliana* cv. Col-0 & Ler)
Stress 1: Salt- NaCl 150 mM
Stress 2: Heat- 43 °C
Stage: 12 days old plants

		Plant response to stress				
		Type A parameter *			Type B parameters *	Type C parameters *
Cultivars	Treatments	Shoot DW (% of control) **	Survival (% of control) **	Rosette diameter (% of control) **	Chlorophyll (% of control) **	Leaf Na ⁺ /K ⁺ ratio **
Col-0	Control	100	100	100	100	0.09
	Salt stress (150 mM NaCl)	80.1	99.63	73.79	109.11	0.23
	Heat stress (43 °C)	69.4	99.9	70.64	70.9	0.08
	Salt + Heat	31.82	37.2	10.45	0.65	0.91
Ler	Control	100	100	100	100	NA
	Salt stress (150 mM NaCl)	78.3	100	74.81	23.17	NA
	Heat stress (43 °C)	57.52	92.9	54.84	41.69	NA
	Salt + Heat	32.66	33.2	7.70	4.63	NA

DW- dry weight

For raw data – Click here (.xlsx file)

Reference- Suzuki N, Bassil E, Hamilton JS, Inupakutika MA, Zandalinas SI, Tripathy D, Luo Y, Dion E, Fukui G, Kumazaki A, Nakano R, Rivero RM, Verbeck GF, Azad RK, Blumwald E, Mittler R. ABA is required for plant acclimation to a combination of salt and heat stress. PLoS One. 2016; 11(1):e0147625.

Note:

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

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

The inference from the study: The study by Suzuki *et al.*, 2016 was conducted to test the effect of salt and heat stress alone and in combinations on the growth of two cultivars of thalecress cv. Col-0 and Ler. Results showed higher reduction in shoot dry weight and survival percentage under combined stress compared to individual stresses in both the cultivars. But the extent of damage was more in Ler cultivar compared to Col-0. Among the individual stresses, heat stress caused higher damage to plants compared to salt stress. **Altogether study shows**



Stress Combination and their Interaction in Plants (SCIP) Database

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

that combined salt and heat stress negatively affected the growth of two thalecress cv. Col-0 and Ler.