

Effect on soybean cultivars (*Glycine max* L. Merr)

The net impact of individual and combined stress on plant growth

Stress 1: Drought
Stress 2: Cadmium
Stage of plant: 15-day old seedling

The table shows the impact of individual and combined drought and heavy metal cadmium stress on morphology of soybean cultivars

Cultivars	Treatment	Response under combined stress		
		Type A parameters		
		Plant height (cm)	Root length (cm)	No. of root tips
William82	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	15.72	5.93	18.03
	PEG (10 %) only	19.03	7.07	20.23
Resnik	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	12.42	5.15	12.94
	PEG (10 %) only	17.75	6.17	18.58
Liaodou3	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	10.18	6.38	15.24
	PEG (10 %) only	15.13	7.4	18.57
Liaodou10	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	5.68	4.77	10.52
	PEG (10 %) only	12.68	6.33	15.83
	Untreated	24.33	13.8	27.3
Liaodou11	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	16.25	5.63	14.35
	PEG (10 %) only	18.43	8.3	18.1
Liaodou12	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	15.95	5.5	17.27
	PEG (10 %) only	19.37	6.7	19.93
Liaodou32	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	20.03	6.53	14.33



Stress Combination and their Interactions in Plants (SCIP) Database

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

	PEG (10 %) only	21.08	9.8	21.93
Shennong20	PEG (10 %) + CdCl ₂ (0.5mg/L) (Simultaneous stress)	19.5	6.7	16.55
	PEG (10 %) only	21.37	9.9	21.6

Reference– Bashir W, Anwar S, Zhao Q, Hussain I, Xie F (2019) Interactive effect of drought and cadmium stress on soybean root morphology and gene expression. *Ecotoxicol. Environ. Saf.* **175**: 90–101

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

Inference from the study: The combined stress of drought and heavy metal reduced the plant height, root length and number of root tips in comparison to single drought stress in all soybean cultivars. The combined drought and heavy metal stress caused detrimental effects on soybean cultivars.