Effect on rice cultivars (*Oryza sativa* L.) cv. Sakha 101 & Giza 178

Crop: Rice cv. Sakha 101 & Giza 178
Stress 1: 0, 10, 50, 100 µM $NiSO_4$
Stress 2: Ozone- 75 ppb/h
Stage of the plant: 7-days-after sowing

The net impact of individual and combined stress on plant growth.

The table shows the effect of nickel and ozone stress alone and in combination on the growth of rice cultivars Sakha 101 and Giza 178.

Cultivars	Stress treatments	Plant response to stress (% reduction over control)	
		Type A parameter *	
		Root fresh weight	Shoot fresh weight
Sakha 101	10 µM Ni	26.1 ⬇	40.0 ⬇
	50 µM Ni	39.1 ⬇	48.3 ⬇
	100 µM Ni	39.1 ⬇	52.5 ⬇
	Ozone	39.1 ⬇	41.7 ⬇
	Ozone + 10 µM Ni	43.5 ⬇	41.7 ⬇
	Ozone + 50 µM Ni	34.8 ⬇	45.0 ⬇
	Ozone + 100 µM Ni	21.7 ⬇	29.2 ⬇
Giza 178	10 µM Ni	6.23 ⬇	36.89 ⬇
	50 µM Ni	36.23 ⬇	56.31 ⬇
	100 µM Ni	61.25 ⬇	68.93 ⬇
	Ozone	43.74 ⬇	53.40 ⬇
	Ozone + 10 µM Ni	24.98 ⬇	46.60 ⬇
	Ozone + 50 µM Ni	31.25 ⬇	48.54 ⬇
	Ozone + 100 µM Ni	23.11 ⬇	30.10 ⬇

For processed data – Click here (.xlsx file)
Reference- Tammam A, Badr R, Abou-Zeid H, Hassan Y, Bader A. (2019) Nickel and ozone stresses induce differential growth, antioxidant activity and mRNA transcription in *Oryza sativa* cultivars. Journal of Plant Interactions 14(1):87-101.

Note: *Values presented in the table were calculated using the formula described below.*

$$\text{Reduction over control (\%)} = \frac{(\text{Value}_{\text{Control}} - \text{Value}_{\text{Stress}})}{\text{Value}_{\text{Control}}} \times 100$$

1) '⬇ '- indicates plant parameters affected by stress that lead to high susceptibility (higher the value more the damage).

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

The inference of the study: Tammam *et al.*, 2019 study focused on understanding the effect of nickel and ozone stress alone and in combination on the growth of rice cultivars Sakha 101 and Giza 178. Results showed no significant reduction in shoot and root fresh weight under combined stress as compared to individual stresses except under combined Ni (100 µM) and ozone stress, where shoot dry weight was less reduced compared to individual stresses under both the cultivars. Sakha 101 cultivar was relatively more tolerant compared to Giza 178 cultivar.