

SALINITY TOLERANCE OF WHEAT VARIETIES

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Seed germination was studied on six wheat varieties (HD-2189, WH-157, WH-147, WH-283, WH-416 and Kharchia) at 4 levels of saline water (ECi 4.6, control; 6, 9 and 12 dS/m). Saline water of 6.0, 9.0 and 12.0 EC dS/m were prepared by keeping SAR constant at 20, Ca to Mg ratio of 1:1.6 and Cl to SO₄ 4:1 upto 9 EC and 5:1 for 12.0 EC water. Per cent germination was recorded after every 24 hours till the 13th day of sowing. Height of the seedlings was recorded at the time of harvesting, and dry weight per plant was recorded after oven drying the samples.

Seedling emergence at the highest level of salinity was maximum in HD-2189. Per cent seedling emergence to the tune of 51.8, 84.4, 60.8, 63.9 and 81.2 in HD-2189, WH-147, WH-157, WH-283 and Kharchia at ECi 12 dS/m indicated that the same was reduced markedly at the same ECi over control. On 10th and 13th day the highest seedling emergence was recorded in variety WH-157 (83.3%) at highest salinity level.

With increase in salinity from 4.6 to 12 EC (dS/m) the percentage reduction in seedling height was 56.71, 79.12, 43.28, 45.31, 79.53 and 31.19 in variety HD-2189, WH-147, WH-157, WH-283, WH-416 and Kharchia, respectively maximum being 3.01 cm in HD-2189 and lowest 2.57 cm in WH-147.

Dry weight decreased with a rise in salinity levels. The decrease recorded in the dry weight was 14.58, 39.58, and 47.91 per cent at the respective conductivity levels of 6, 9 and 12 over control, The per cent reduction in dry weight by 39.1, 63.8, 42.5, 41.0, 35.0 and 57.4 in HD-2189, WH-147, WH-157, WH-283, WH-416 and Kharchia at the highest salinity over control signifies the differential response of varieties to salt levels.

Table 1. Mean seedling height of wheat varieties at different levels of salinity.

| Salinity level EC (dS/m) | Variety | | | | | | Mean |
|-----------------------------|------------|-----------|-----------|-----------|-----------|----------|------|
| | HD 2189 | WH 147 | WH 157 | WH 283 | WH 416 | Kharchia | |
| 4.6 | 4.39 | 4.79 | 3.35 | 3.95 | 4.30 | 3.43 | 4.03 |
| 6.0 | 3.76 | 3.26 | 3.33 | 2.86 | 3.16 | 3.46 | 3.30 |
| 9.0 | 2.02 | 1.23 | 2.53 | 1.56 | 2.00 | 2.50 | 1.97 |
| 12.0 | 1.90 | 1.00 | 1.90 | 2.16 | 0.88 | 2.36 | 1.70 |
| Mean | 3.01 | 2.57 | 2.77 | 2.63 | 2.58 | 2.93 | — |
| CD at 5% | 0.60 | | | | | | |