**Table 1: Water quality**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **EC (dSm-1)** | **pH** | **CO3 (meq L-1)** | **HCO3 (meq L-1)** | **Ca (meq L-1)** | **Mg**  **(meq L-1)** | **RSC** |
| BAW  (0.8 dSm-1) | 0.8 | 7.69 | 1.25 | 7.5 | 2.5 |  | 2.25 |
| SW  (6 dSm-1) | 6 | 7.63 | 1.75 | 9.5 | 7.0 |  | 13.75 |

**Table 2: Soil analysis**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **EC2 (dSm-1)** | | **pH2** | | **ECe (dSm-1)** | | **pHs** | | **Ca (meq L-1)** | |
|  | 0-15 cm | 15-30 cm | 0-15 cm | 15-30 cm | 0-15 cm | 15-30 cm | 0-15 cm | 15-30 cm | 0-15 cm | 15-30 cm |
| BAW  (0.8 dSm-1) | 0.26 | 0.23 | 7.83 | 7.83 | 1.07 | 0.99 | 7.69 | 7.66 | 5.50 | 5.16 |
| SW  (6 dSm-1) | 0.70 | 0.53 | 7.81 | 7.80 | 2.97 | 2.34 | 7.61 | 7.61 | 11.00 | 9.00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Treatment** | **Mg** | | **HCO3 (meq L-1)** | |
|  | 0-15 cm | 15-30 cm | 0-15 cm | 15-30 cm |
| BAW (0.8 dSm-1) | 3.00 | 2.30 | 6.41 | 7 |
| SW (6 dSm-1) | 10.10 | 10.33 | 6.58 | 6.58 |

**Table 3: TDR Value**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **EC (dSm-1) 55 DAS** | | **Moisture (%) 55 DAS** | | **EC (dSm-1) 90 DAS** | **Moisture (%)**  **90 DAS** |
|  | Ridge (0-15 cm) | Furrow (0-10 cm) | Ridge (0-15 cm) | Furrow (0-10 cm) | Ridge (0-15 cm) | Ridge (0-15 cm) |
| BAW  (0.8 dSm-1) | 3.00 | 0.73 | 27.5 | 29.20 | 2.46 | 20.10 |
| SW (6 dSm-1) | 4.80 | 1.23 | 31.60 | 41.17 | 3.40 | 17.69 |

**Table 4: Effect of irrigation water quality on growth and SPAD value of potato genotypes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **Emergence (%)** | **Plant height (cm)** | | **Stem no./ P** | | **(SPAD Value)** | |
| **Irrigation** |  | **45 DAS** | **90 DAS** | **45 DAS** | **90 DAS** | **55 DAS** | **90 DAS** |
| BAW (0.8 dSm-1) | 100 | 49.35 | 53.80b | 5.66 | 5.47 | 42.88a | 41.26a |
| SW (6 dSm-1) | 100 | 49.92 | 56.77a | 5.72 | 5.50 | 42.13b | 39.76b |
| SEm± | 0.0 | 0.45 | 0.70 | 0.10 | 0.13 | 0.22 | 0.29 |
| CD (P=0.05 or 0.01) | NS | NS | 1.97\* | NS | NS | 0.62\* | 0.82\*\* |
| **Genotypes** |  | | | | | | |
| K. Arun | 100 | 57.08 | 59.91 | 5.83 | 5.66 | 46.92 | 42.64 |
| K. Khyati | 100 | 48.25 | 56.33 | 4.33 | 4.33 | 44.45 | 41.99 |
| K. Mohan | 100 | 51.25 | 55.25 | 4.33 | 4.58 | 44.24 | 41.32 |
| K. Neelkanth | 100 | 42.83 | 46.83 | 7.25 | 7.33 | 43.07 | 39.72 |
| K. Pushkar | 100 | 45.33 | 48.16 | 7.66 | 6.83 | 41.74 | 40.40 |
| K. Sindhuri | 100 | 53.75 | 70.25 | 5.58 | 7.00 | 44.45 | 43.05 |
| **General Mean** |  | 49.64 | 55.29 | 5.70 | 5.49 | 42.51 | 40.51 |
| **SEm±** | 0.0 | 2.42 | 3.75 | 0.56 | 0.70 | 1.18 | 1.56 |
| **CD (P=0.05 or 0.01)** | NS | 6.76\*\* | 10.45\*\* | 1.56\*\* | 1.95\*\* | 3.30\*\* | 4.36\*\* |

**Table 5: Effect of irrigation water quality on physiological parameters of potato genotypes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **Parameters** | | | | | |
| **Irrigation** | **Photo. rate** | **Stomatal conductance** | **Internal CO2 Ci** | **Trans. rate** | **PAR** | **Ratio Ci/Ca** |
| BAW (0.8 dSm-1) | 13.56 | 0.69a | 178.34a | 3.26a | 748.10a | 0.85a |
| SW (6 dSm-1) | 14.67 | 0.36b | 112.69b | 2.62b | 519.64b | 0.60b |
| CV(%) | 53.58 | 141.56 | 57.90 | 43.94 | 44.33 | 82.20 |
| SEm± | 0.58 | 0.05 | 6.32 | 0.09 | 20.12 | 0.04 |
| CD (P=0.05 or 0.01) | NS | 0.15\*\* | 17.63\*\* | 0.27\*\* | 56.08\*\* | 0.13\*\* |
| **Genotypes** |  | | | | | |
| K. Arun | 12.21 | 0.54 | 137.53 | 3.04 | 661.10 | 0.74 |
| K. Khyati | 15.60 | 0.63 | 136.31 | 3.75 | 758.26 | 0.71 |
| K. Mohan | 13.29 | 0.41 | 149.84 | 2.91 | 464.41 | 0.64 |
| K. Neelkanth | 16.60 | 0.65 | 131.37 | 3.47 | 670.73 | 0.68 |
| K. Pushkar | 15.36 | 0.50 | 123.24 | 3.55 | 574.77 | 0.66 |
| K. Sindhuri | 12.73 | 0.25 | 124.92 | 2.00 | 817.68 | 0.65 |
| **General Mean** | 14.12 | 0.53 | 145.52 | 2.94 | 633.88 | 0.73 |
| **SEm±** | 3.10 | 0.30 | 33.48 | 0.52 | 106.48 | 0.24 |
| **CD (P=0.05 or 0.01)** | NS | NS | NS | NS | NS | NS |

**Table 6: Effect of irrigation water quality on potato yield**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **Parameters** | | | | | |
| **Irrigation** | **No. mark P/ PL (>20 g)** | **No. non mark P/ PL(<20 g)** | **Total tuber/PL** | **Wt of mark P/PL (g)** | **Wt of non mark P/PL (g)** | **Wt of total tuber/PL**  **(g)** |
| BAW (0.8 dSm-1) | 8.65 | 2.16 | 10.82 | 737.13 | 18.40 | 755.53 |
| SW (6 dSm-1) | 8.76 | 2.40 | 11.16 | 757.56 | 20.71 | 778.27 |
| SEm± | 0.17 | 0.13 | 0.23 | 15.19 | 1.10 | 15.29 |
| CD (P=0.05 or 0.01) | NS | NS | NS | NS | NS | NS |
| **Genotypes** |  | | | | | |
| K. Arun | 9.66 | 2.33 | 12.00 | 1210.33 | 26.08 | 1236.42 |
| K. Khyati | 9.75 | 2.50 | 12.25 | 1148.00 | 24.91 | 1172.92 |
| K. Mohan | 9.83 | 2.00 | 11.83 | 1064.00 | 22.16 | 1086.17 |
| K. Neelkanth | 12.33 | 2.83 | 15.16 | 1040.17 | 21.50 | 1061.67 |
| K. Pushkar | 11.25 | 1.75 | 13.00 | 1026.75 | 17.33 | 1044.08 |
| K. Sindhuri | 14.83 | 8.75 | 23.58 | 1005.50 | 64.75 | 1070.25 |
| **General Mean** | 8.71 | 2.29 | 11.00 | 747.35 | 19.56 | 766.91 |
| **SEm±** | 0.92 | 0.70 | 1.26 | 80.39 | 5.86 | 80.93 |
| **CD (P=0.05 or 0.01)** | 2.58\*\* | 1.95\*\* | 3.51\*\* | 224.02\*\* | 16.34\*\* | 225.52\*\* |

**Table 7: Effect of irrigation water quality on nutrient content of potato genotypes**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Treatment** | **Parameters** | | | | |
| **Irrigation** | **N (%)** | **P (%)** | **K (%)** | **Na (%)** | **Ca (ppm)** |
| BAW (0.8 dSm-1) | 0.29 | 0.20 | 2.08 | 0.03 | 110.8 |
| SW (6 dSm-1) | 0.26 | 0.18 | 2.17 | 0.07 | 123.1 |
| SEm± |  |  |  |  |  |
| CD (P=0.05) |  |  |  |  |  |
| **Genotypes** |  | | | | |
| K. Arun | 0.27 | 0.19 | 1.95 | 0.04 | 163.7 |
| K. Khyati | 0.32 | 0.18 | 2.15 | 0.07 | 143.4 |
| K. Mohan | 0.24 | 0.19 | 2.05 | 0.04 | 101.5 |
| K. Neelkanth | 0.27 | 0.20 | 2.10 | 0.07 | 87.6 |
| K. Pushkar | 0.24 | 0.18 | 1.95 | 0.05 | 104.8 |
| **Range** | 0.24-0.32 | 0.17-0.20 | 1.95-2.15 | 0.04-0.07 | 87.6-163.7 |
| **SEm±** |  |  |  |  |  |
| **CD (P=0.05** |  |  |  |  |  |

**Table 8: Effect of irrigation water quality on nutrient content of potato**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **Parameters** | | | | | |
| **Irrigation** | **Mg (ppm)** | | **Fe (ppm)** | **Zn (ppm)** | **Cu (ppm)** | **Mn (ppm)** |
| BAW (0.8 dSm-1) | 167.2 | | 761.9 | 36.0 | 26.7 | 9.1 |
| SW (6 dSm-1) | 145.1 | | 206.5 | 29.9 | 26.3 | 13.2 |
| SEm± |  | |  |  |  |  |
| CD (P=0.05) |  | |  |  |  |  |
| **Genotypes** |  | | | | | |
| K. Arun | 121.6 | 337.0 | | 29.1 | 17.4 | 6.1 |
| K. Khyati | 146.6 | 213.2 | | 33.3 | 12.8 | 10.2 |
| K. Mohan | 143.5 | 850.2 | | 34.2 | 40.5 | 19.1 |
| K. Neelkanth | 155.5 | 347.9 | | 30.2 | 25.0 | 7.6 |
| K. Pushkar | 173.8 | 359.2 | | 29.1 | 29.2 | 7.3 |
| **Range** | 121.6-173.8 | 213.2-850.2 | | 29.1-34.2 | 12.4-40.5 | 2.8-19.1 |
| **SEm±** |  |  | |  |  |  |
| **CD (P=0.05)** |  |  | |  |  |  |